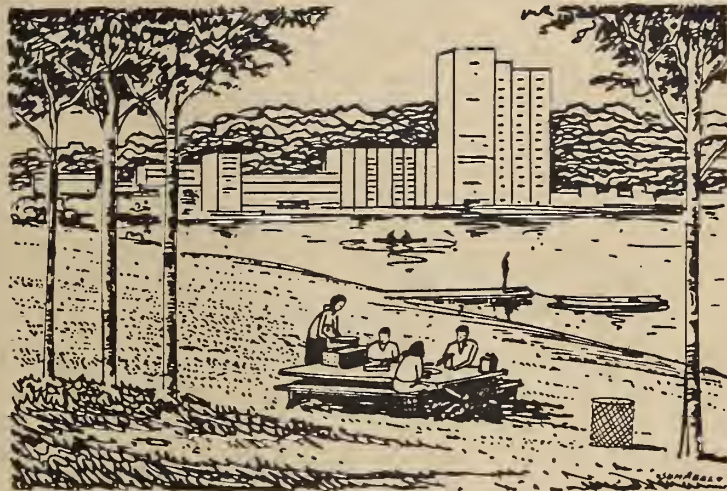


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Clarks Creek Flood Plain Study

Catawba County, North Carolina

Prepared by

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

In cooperation with

THE NORTH CAROLINA DEPARTMENT OF NATURAL AND ECONOMIC RESOURCES
CATAWBA COUNTY SOIL AND WATER CONSERVATION DISTRICT
and
CATAWBA COUNTY

October 1975

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CLARKS CREEK FLOOD PLAIN STUDY

CATAWBA COUNTY, NORTH CAROLINA

Prepared By

United States Department of Agriculture

Soil Conservation Service

Raleigh, North Carolina

In Cooperation

With

North Carolina Department of Natural and Economic Resources

Catawba County Soil and Water Conservation District

and

Catawba County

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CLARKS CREEK FLOOD PLAIN STUDY

INTRODUCTION

The Clarks Creek Flood Plain Study was prepared in accordance with a Plan of Study for Flood Plain Study, dated June 1973. The study area, location, scope, study responsibility, estimated costs, funding arrangements, and tentative schedules were agreed to prior to initiation of the study.

This flood plain study was requested by Catawba County, the study sponsor. The Catawba County Soil and Water Conservation District endorsed the request and the North Carolina Department of Natural and Economic Resources approved the request and established the priority for the study in accordance with Joint Coordination Agreement for Flood Hazard Analysis and Flood Plain Studies between the State of North Carolina and the Soil Conservation Service, U. S. Department of Agriculture.

The Soil Conservation Service conducts flood hazard analyses under the authority of Section 6 of Public Law 83-566, in response to Recommendation 9(c), "Regulation of Land Use," of House Document No. 465, 89th Congress, 2nd Session, and in compliance with Executive Order 11296, dated August 10, 1966.

The Service has the responsibility for developing the technical data required to accurately define the limits of flooding for the agreed on storms and for the technical data required to determine floodway limits. The sponsoring local organization, however, has the responsibility for delineating the floodway based on the technical data furnished by the Soil Conservation Service. The delineation of the floodway is controlled by the Floodway Regulation Law, G. S. 143-215.51-.61, and General Statutes, G. S. 143-215.52(2) and G. S. 143-215.53.

The study was funded jointly by federal river basin funds, funds from the North Carolina Department of Natural and Economic Resources, and funds from Catawba County.

PURPOSE AND OBJECTIVES

This study was made to provide the necessary data for planners to make sound land use decisions for that land under their influence which is subject to flooding. It is not the intent of this report to offer solutions to flood problems in the study area, but rather to identify those areas which are subject to flooding so that they might be developed to land uses which are compatible with its tendency to flood.

The Clarks Creek Flood Plain Study was prepared for a rapidly urbanizing area. This area is undergoing a sharp change from predominantly rural setting to one of small urban centers whose boundaries are spreading until they join each other. If the growth in this area is allowed to develop without the flood hazard information published in this report for guidance, there will be areas developed that will be flooded at frequent intervals. However, with the delineation of the flood hazard areas in this report, the county officials will have the necessary data to guide their land use controls so that development within the flood prone areas can be controlled.

LOCATION AND IDENTIFICATION OF THE STUDY AREA

Clarks Creek is located in the west central Piedmont Plateau of North Carolina. Clarks Creek, with its headwaters in the suburbs of Hickory, flows south through Lincolnton, North Carolina to its enbouchure at the South Fork River, a part of the Santee River Basin. The study area, being in the Piedmont Plateau, is characterized by rolling to gently rolling topography in the uplands and rather broad, flat flood plain adjacent to the streams. Steep, precipitous slopes are few. Elevations range from 1,175 feet above mean sea level at Hickory to about 760 feet above sea level at the confluence with the South Fork River at Lincolnton, North Carolina.

According to the data from the weather station at Hickory in the northern part of the study area, the average annual precipitation is 49

inches. The average temperature ranges from about 41 degrees Fahrenheit in January to around 77 degrees Fahrenheit in July, with an average annual temperature of approximately 60 degrees Fahrenheit. The average freeze-free period extends from the first week of April to the first week of November.

The study area, that portion of the Clarks Creek Watershed in Catawba County, has a drainage area of approximately 65 square miles or 41,600 acres. Portions of the cities of Hickory, Conover, Maiden and Newton are within the study area, making it one of the most densely populated areas in the Piedmont.

Urban and commercial development are estimated at 20 and 25 percent of the watershed. The majority of the area is cropland, pastureland, and woodland.

Flood hazard areas are identified for a total of about 36 miles of streams in the study area and are shown on the Flood Hazard Analysis Index Map. Those streams included in the study and the lengths studied are shown in the following table.

<u>Stream</u>	<u>Length Studies</u> Miles
Clarks Creek Main	15
Clarks Creek Tributaries	
Trib "c"	0.5
Cline Creek	1.3
Anthony Creek	1.0
Smyre Creek	2.2
Town Creek	1.2
Bili Creek	1.3
Betts Creek	2.2
Pinch Gut Creek	3.1
Maiden Creek	5.2
Allen Creek	2.0
Holly Branch	0.9

Flood hazard areas are identified within the communities of Hickory, Maiden, and Newton.

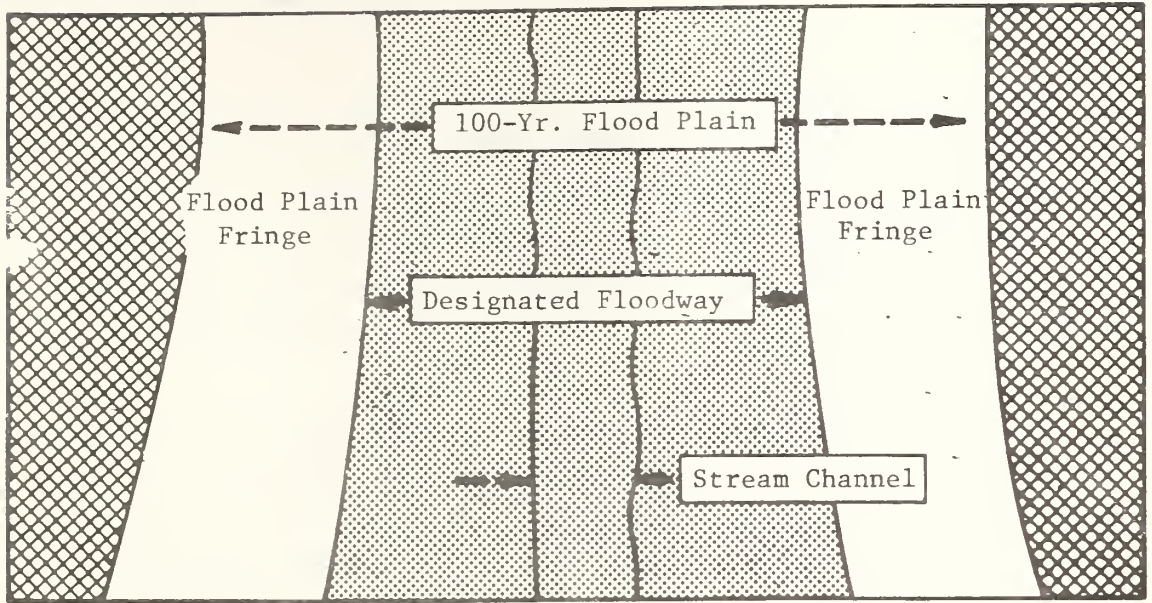
TECHNICAL PROCEDURES

The analytical methods used in developing the data for this report are outlined in the Soil Conservation Service National Engineering Handbook, Section 4, and other standard guides and texts. A rainfall-runoff relationship and unit hydrograph method were used to develop the stage-discharge-frequency data required to define the flood prone areas. There are no stream gages within the study area; however, data from a gage in an adjoining watershed with similar hydrologic characteristics were analyzed, and the results compared favorably to the results from the study area obtained using the unit hydrograph method. The floodway data were developed in accordance with guidelines and criteria provided by the North Carolina Department of Natural and Economic Resources and with requirements of the U. S. Department of Housing and Urban Development. These guidelines require the use of equal conveyance loss on each side of the flood plain in determining the floodway (see Figure 1.).

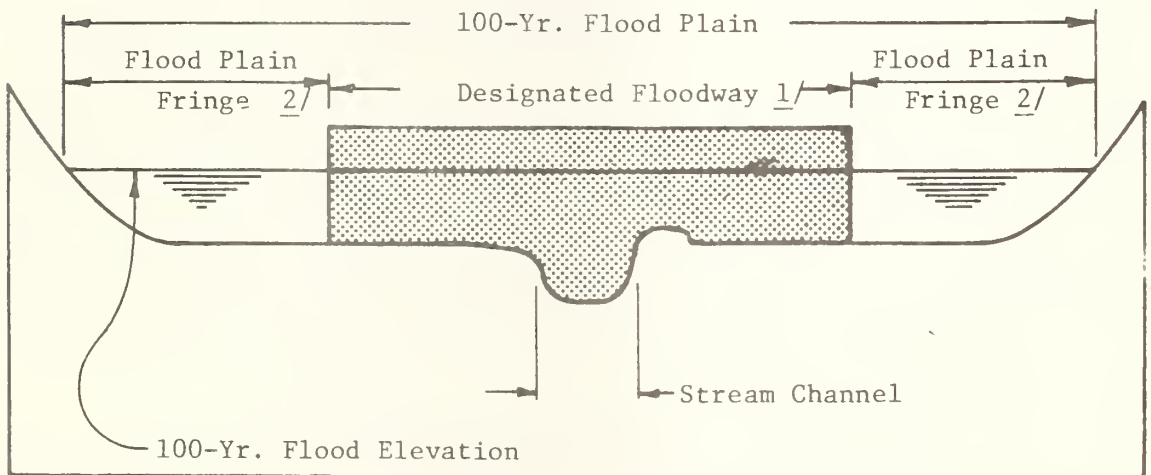
The floodway data are in accordance with Section 3, Article 21, Chapter 146 (part 6) of the General Statutes of North Carolina.

Water surface profiles were determined for the 10-year frequency, 100-year frequency, and a large magnitude storm (14 inch rainfall) exceeding the 100-year storm. A total of 76 representative cross sections were surveyed and used to develop the stage-discharge rating curve for developing the water surface profiles. In addition a floodway was calculated to convey the 100-year future condition flood with a one foot increase in water surface above the computed 100-year future condition flood, and with equal conveyance loss on each side of the flood plain. The delineation of the flood plain the upstream reaches was terminated when the flood plain width was less than 400 feet.

FLOOD HAZARD AREAS



PLAN VIEW



CROSS SECTION

- 1/ DESIGNATED FLOODWAY is the adjusted portions of the 100-year flood plain allowing for an acceptable increase in the 100-year flood height, no building or fill permitted.
- 2/ FLOOD PLAIN FRINGE - Urban use permitted if protected by fill, floodproofed, or otherwise protected.

Figure 1

The outline of the floodway as shown on the maps was delineated using data developed by the Soil Conservation Service and located as approved by the sponsoring local organization.

The 100 year flood was analyzed both with existing development conditons and with estimated future development conditions. The present conditions analysis was used to compare the simulation model with the analysis of stream gage data from the adjoining watershed. The future conditions analysis was used to determine the extent of flooding which is to be expected in the study area.

The future conditions considered were provided by local officials and were based on existing and planned zoning regulations that will influence the amount, kind, and location of development within the study area. This being one of the most dense urban areas in the Piedmont of North Carolina, the projected development is for a high degree of urban and commercial development. This urban condition is reflected in the analysis by increased runoff resulting in more flooding.

MAPS AND PROFILES

Included in this report are photo-strip maps of the flood plain area showing the areas that will be flooded by the large magnitude flood, the 100 year flood, and the area required for the floodway as approved by the Sponsors. Also included are profiles of the streams studies showing the elevations of the water surface of the various floods.

INTERPRETATION FOR USE OF REPORT

The flood stages provided in this report should be considered as minimum elevations for controlling development. Certain indeterminate factors and conditions affecting future flood flows could cause greater flood stages than indicated. During floods it is possible that debris may collect on bridges and culverts, uprooted trees and stumps could clog

the channels, thus reducing the flow capacity of the bridge openings and channels. These factors cannot be accurately predicted and were not considered in preparing this report.

The plan was developed based on the future development being in line with current zoning restrictions and with the necessary floodway being open to flood flows. If development is allowed which is more intense than was used in preparing the report or if encroachment is allowed within the needed floodway, a reassessment based on actual conditions would be necessary to adequately describe flood stages and flood zone boundaries.

The photo-strip maps show the flood zones as discussed above. The zone limits shown on the maps approximate the location on the ground and can be used for most decisions concerning permits for buildings and other developments. For more precise location of the flood zone boundaries, the elevations shown on the profiles can be transferred from established bench marks to the point in question. The location and elevation of bench marks established during this study are available from Catawba County and from the SCS.

The 76 representative surveyed valley sections are located on the photo strip maps and on the profile sheets. Use of these sections as reference points can be helpful in determining flood elevations at any stream station on the profiles.

The Soil Conservation Service has completed a Soils Survey of Catawba County which will be published in the immediate future. This Soil Survey shows the types of soils in the flood plain and adjacent areas, together with soils maps showing the location of these soils. The soil survey can be used with this flood plain study to aid in the location of flood prone areas.

Soil Conservation Service personnel are available to provide further explanation or interpretation of this report upon request. The basic

data not included in this report are on file in the offices of the United States Department of Agriculture, Soil Conservation Service, Federal Building, 310 New Bern Avenue, P. O. Box 27307, Raleigh, North Carolina 27611.

Appendix A

maps

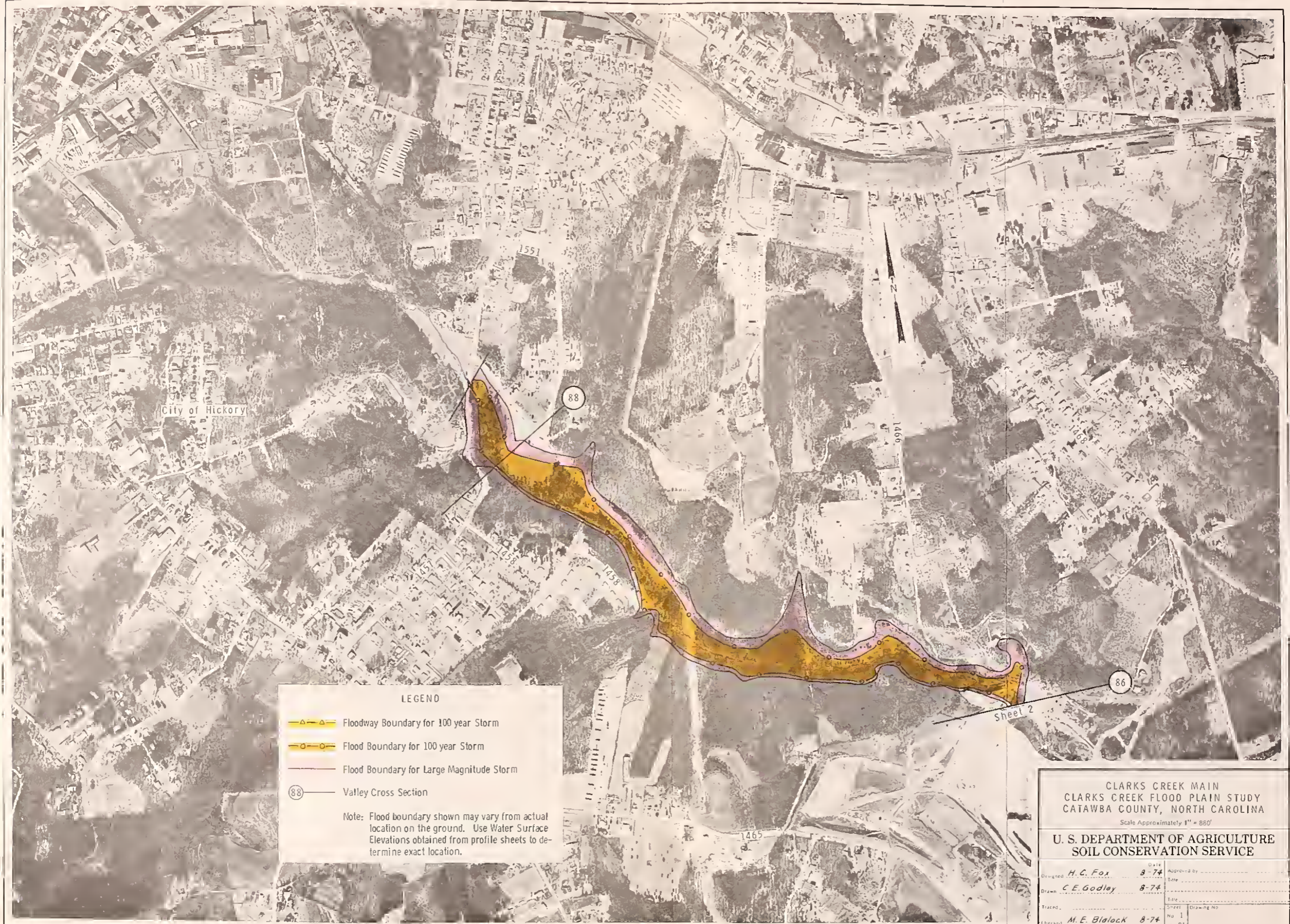


- LEGEND**
- PRIMARY ROAD
 - SECONDARY ROAD
 - PROPOSED INTERSTATE HIGHWAY
 - U.S. HIGHWAY
 - STATE HIGHWAY
 - COUNTY ROAD
 - TOWN
 - CITY BOUNDARY
 - SINGLE RAILROAD
 - DOUBLE RAILROAD
 - POWER LINE
 - COUNTY LINE
 - DRAINAGE
 - WATERSHED BOUNDARY
- SHEET 1 OF 21



FLOOD HAZARD ANALYSES MAP INDEX
CLARKS CREEK WATERSHED
CATAWBA AND LINCOLN COUNTIES, NORTH CAROLINA
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
RALEIGH, NORTH CAROLINA

1 0 1 2 Miles



LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	H. C. Fox	Date	8-74	Approved by	
Drawn	C. E. Godley	Title	8-74		
Traced		Sheet	No. 1	Drawing No.	
Checked	M. E. Blalock		8-74		of 21

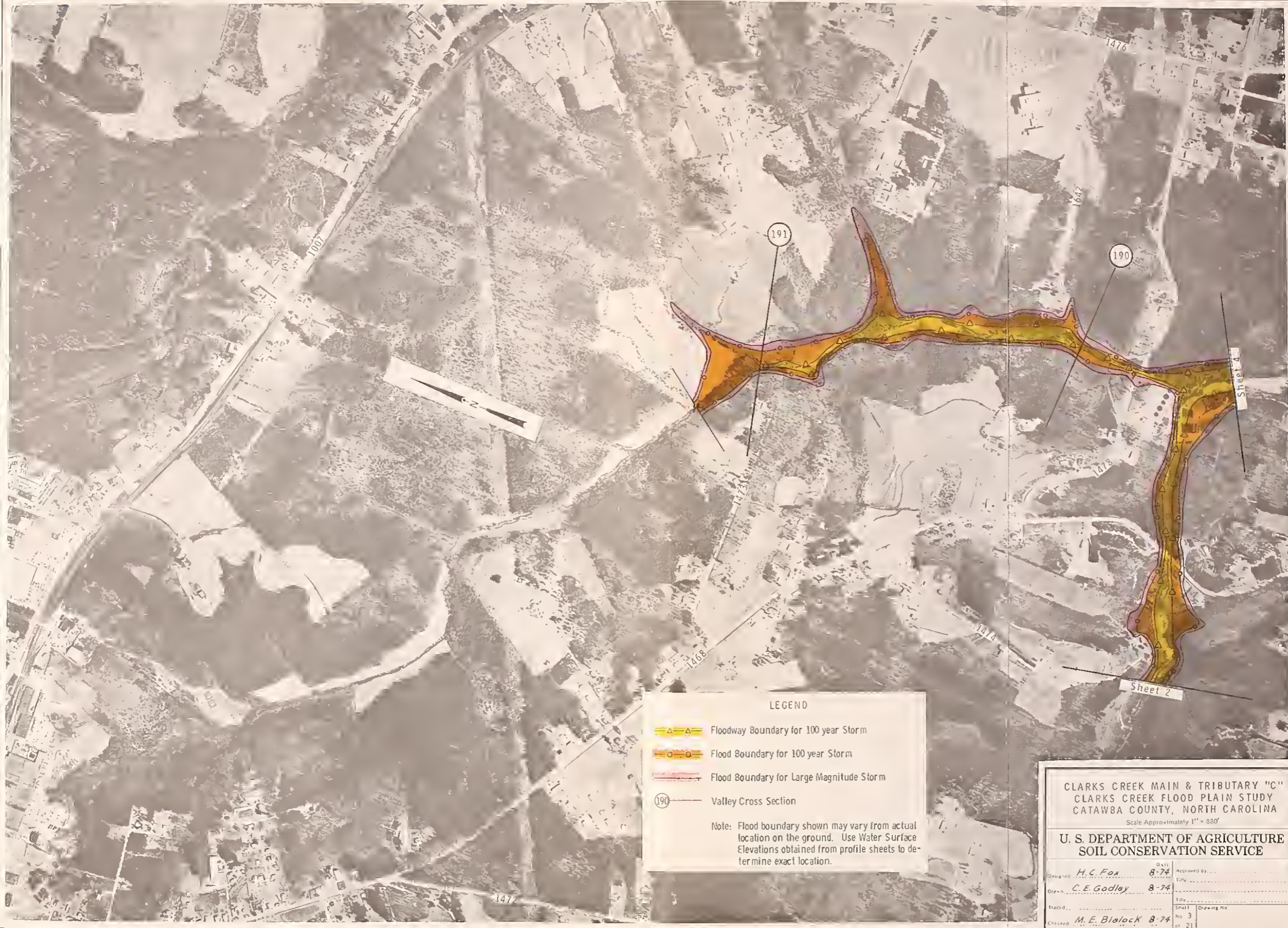


LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN CLARKS CREEK FLOOD PLAIN STUDY CATAWBA COUNTY, NORTH CAROLINA Scale Approximately 1" = 880'			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
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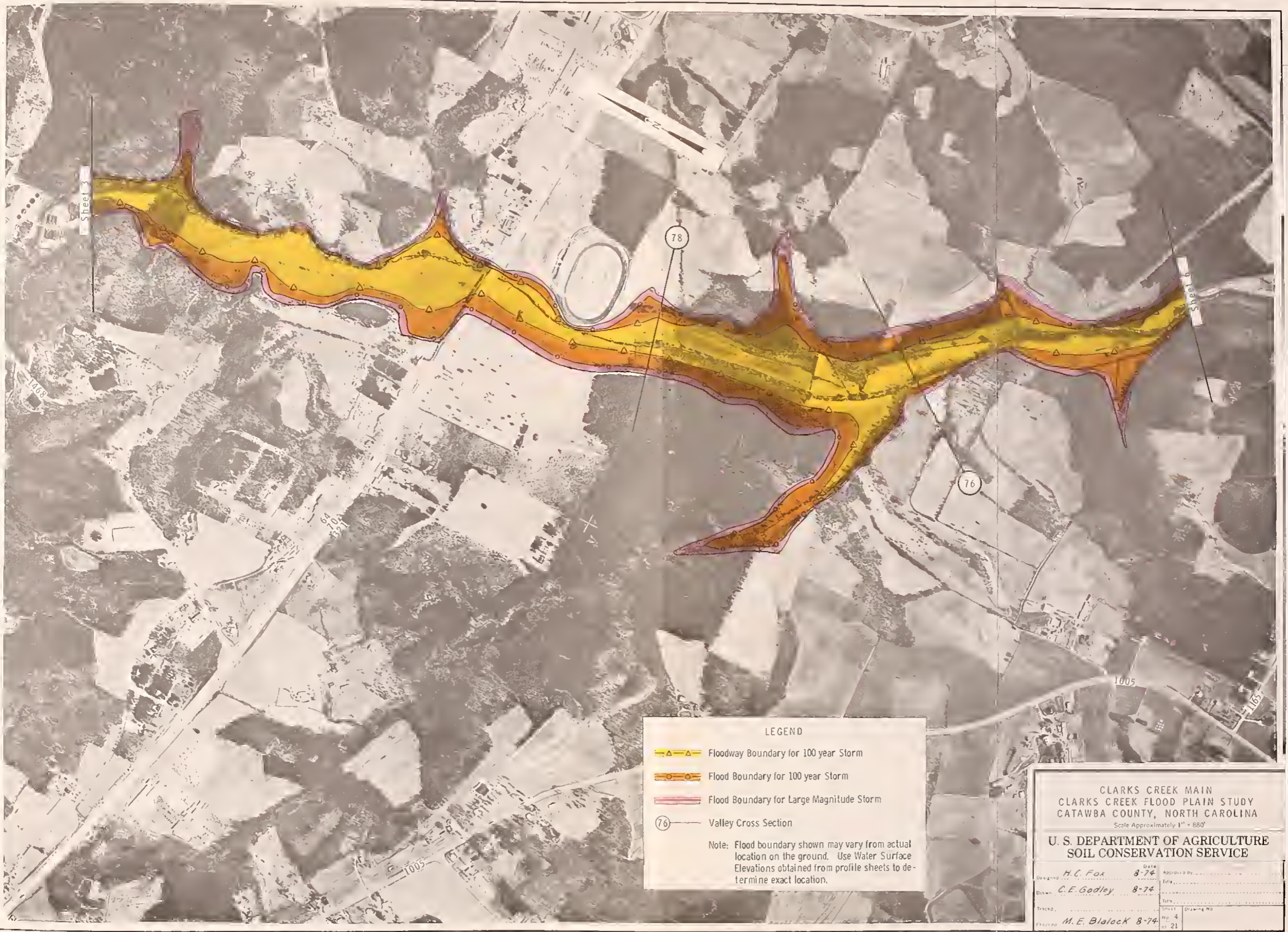
- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN & TRIBUTARY "C"
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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			of	21



LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

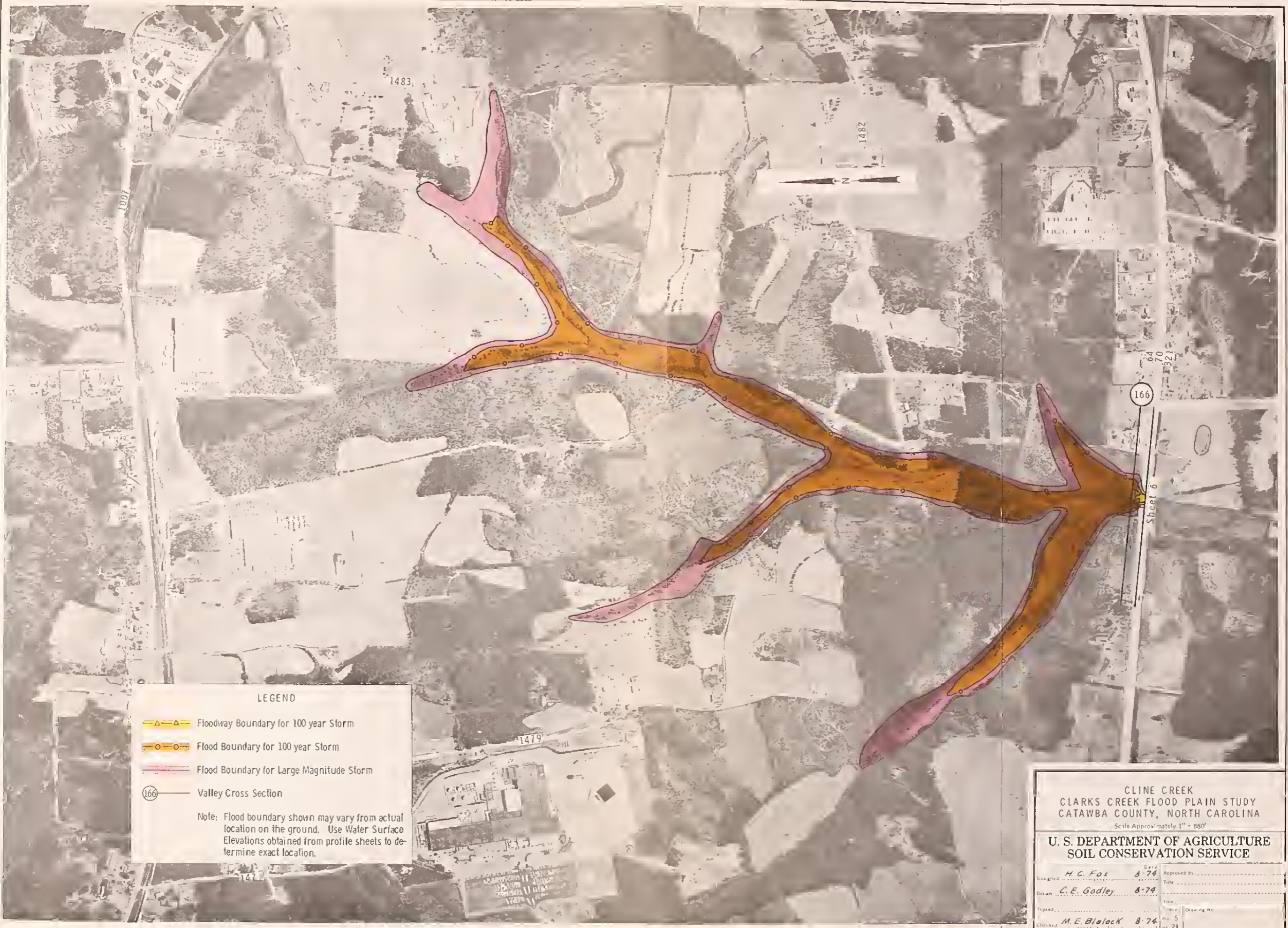
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LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLINE CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

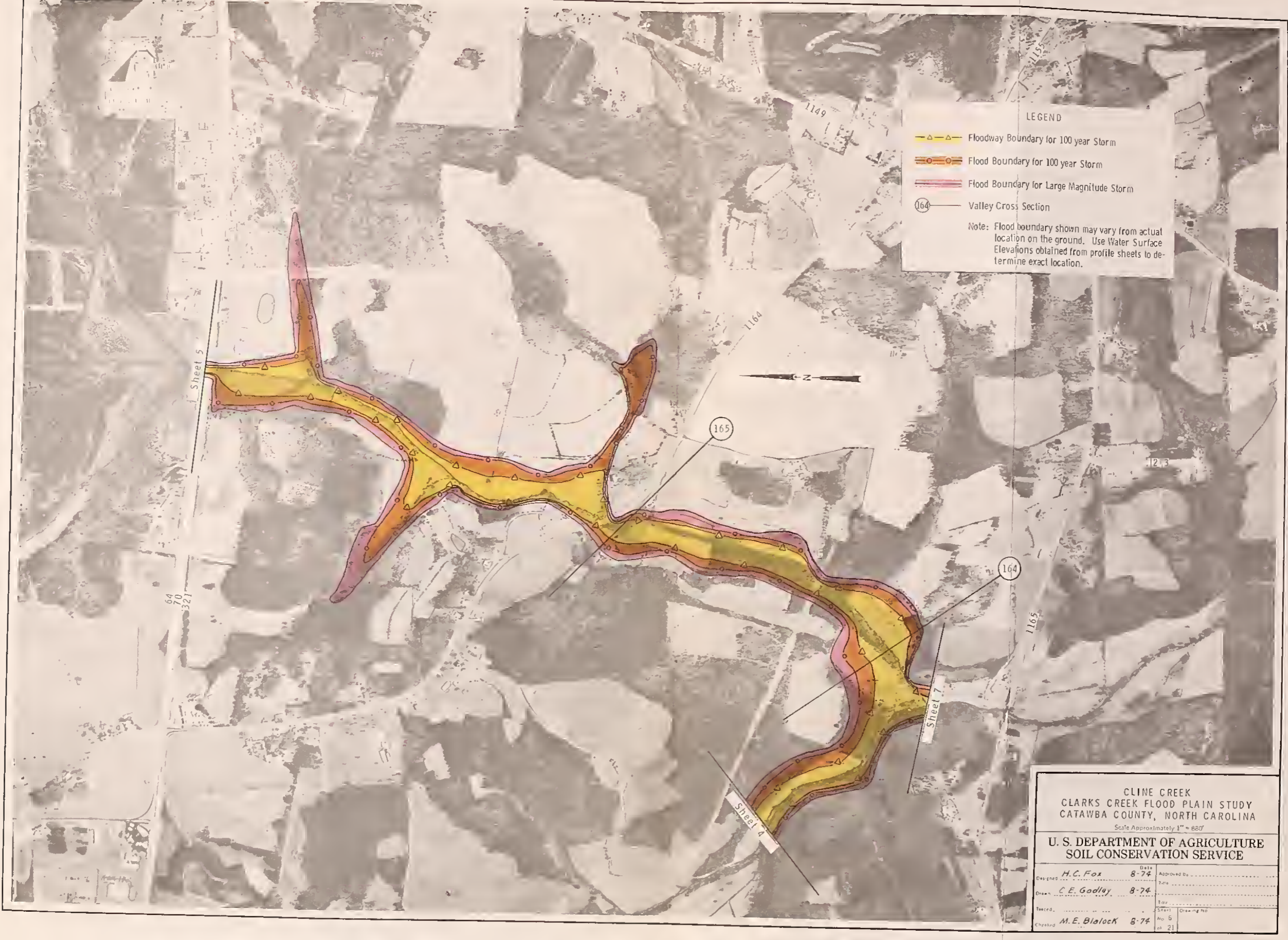
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- △—△— Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- ①64— Valley Cross Section

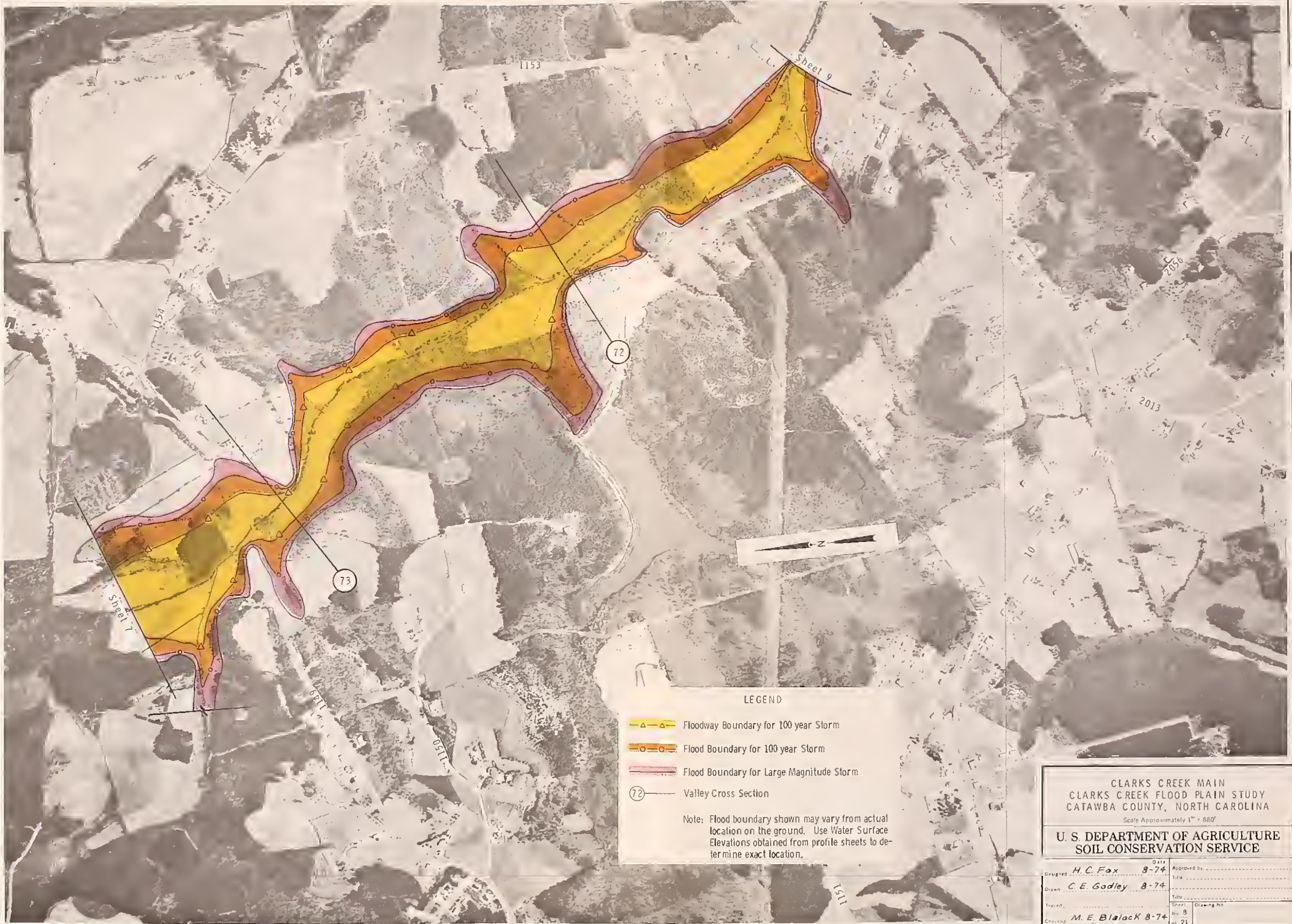
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLINE CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

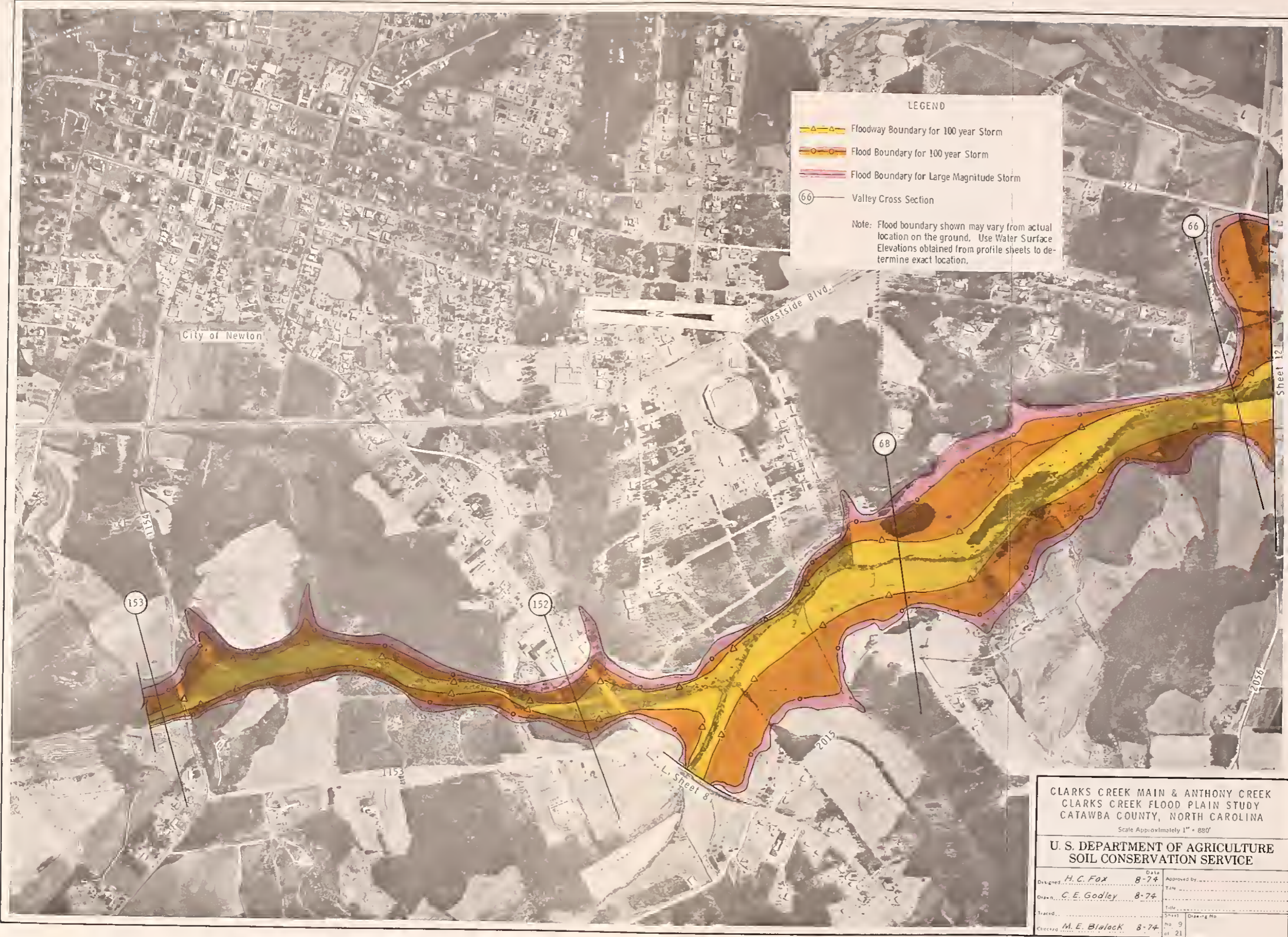
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	H. C. Fox	Date	8-74	Approved by	
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LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- 66 Valley Cross Section

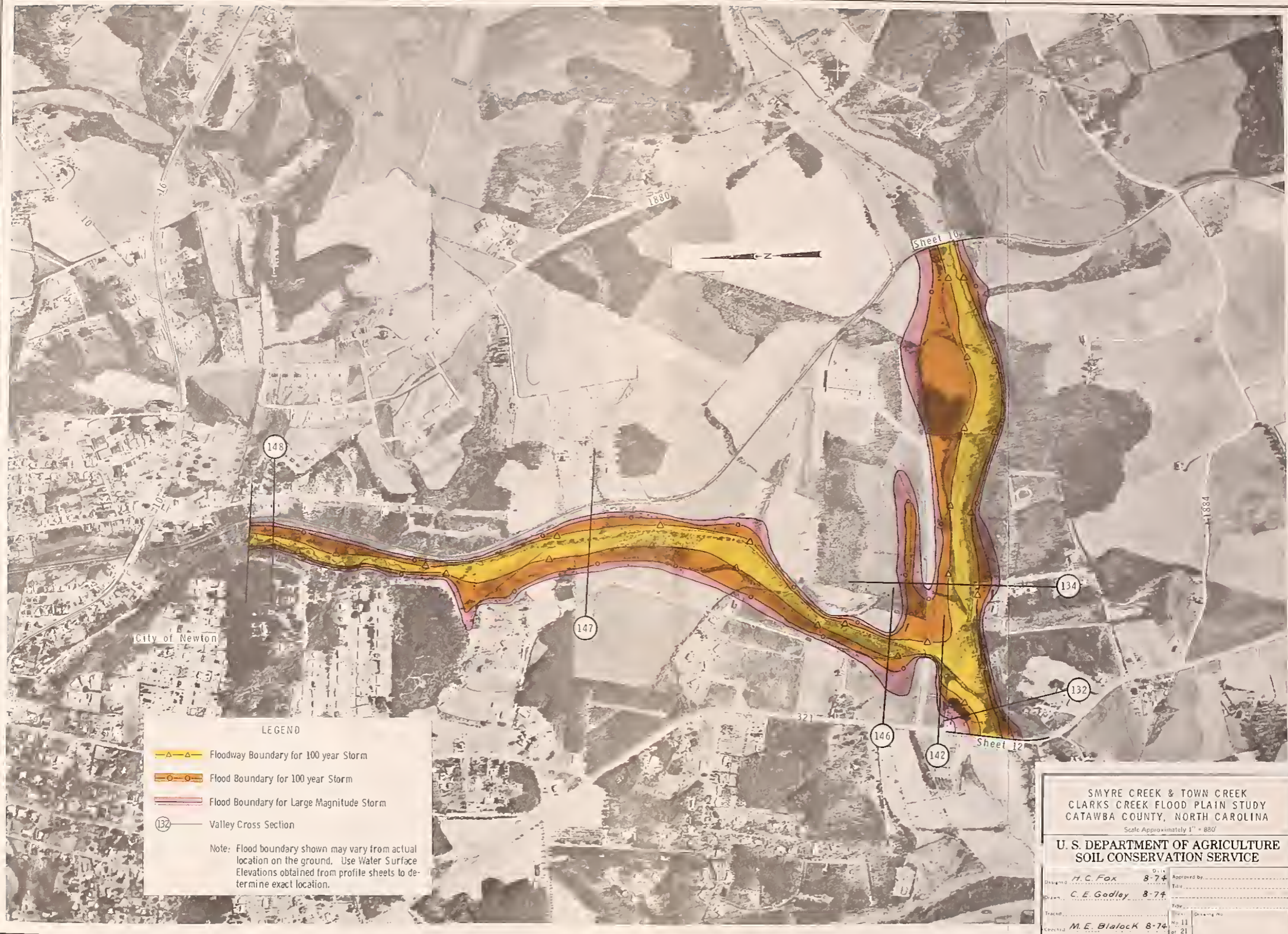
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN & ANTHONY CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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				of	21





LEGEND

- △—△— Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- ⑬②— Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

SMYRE CREEK & TOWN CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

**U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE**

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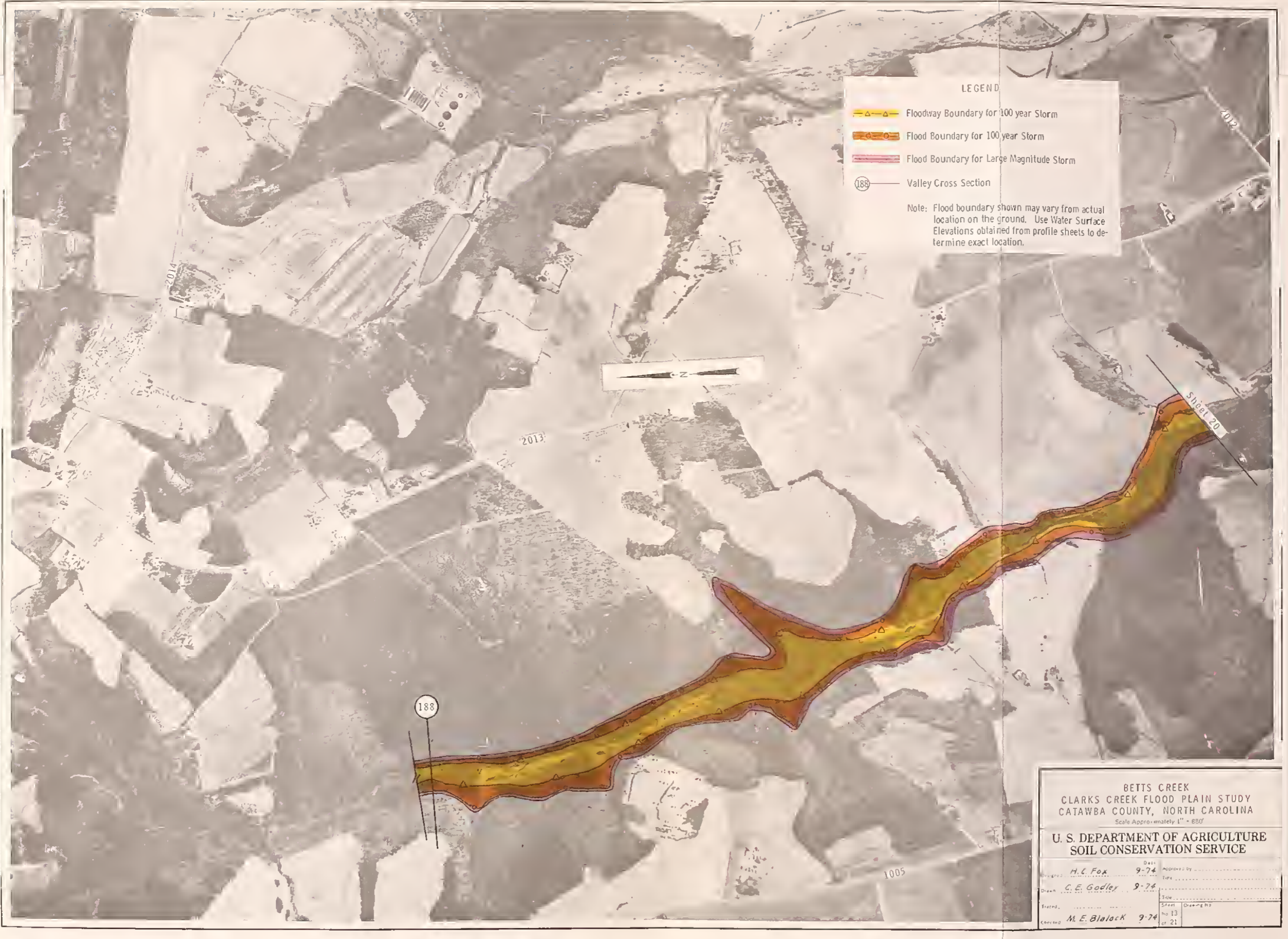
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- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN & BILI CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

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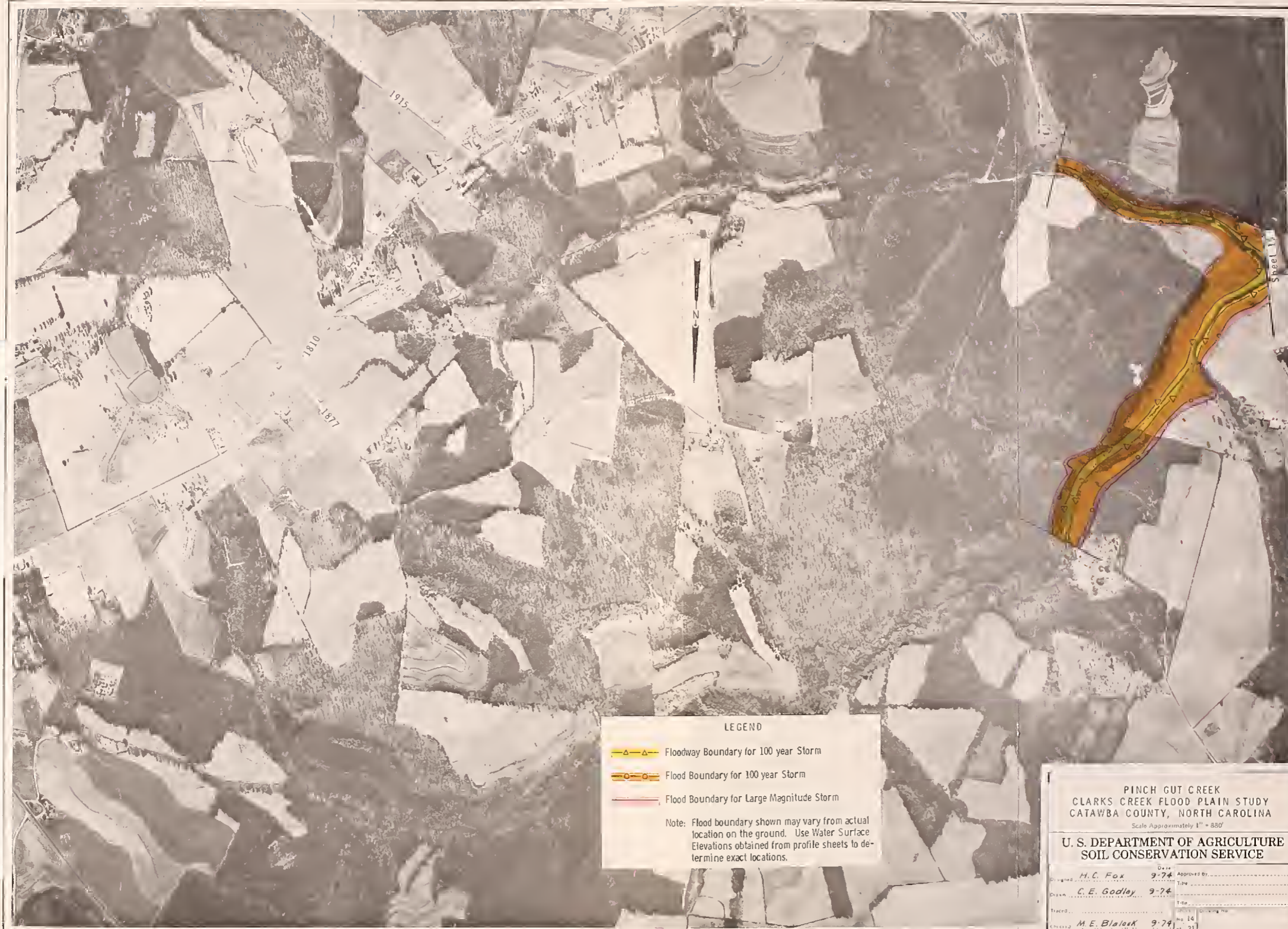
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- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

BETTS CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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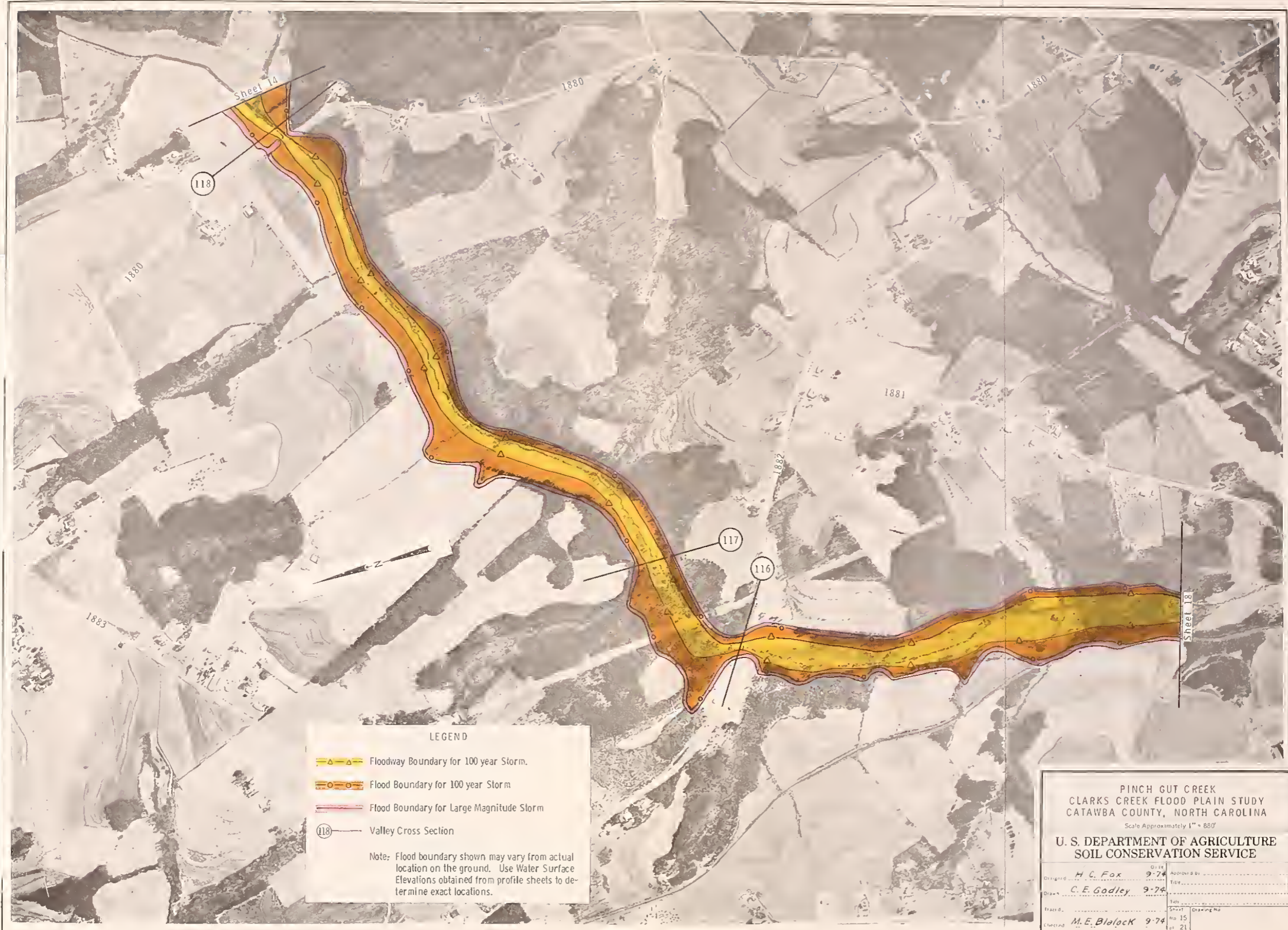
- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm

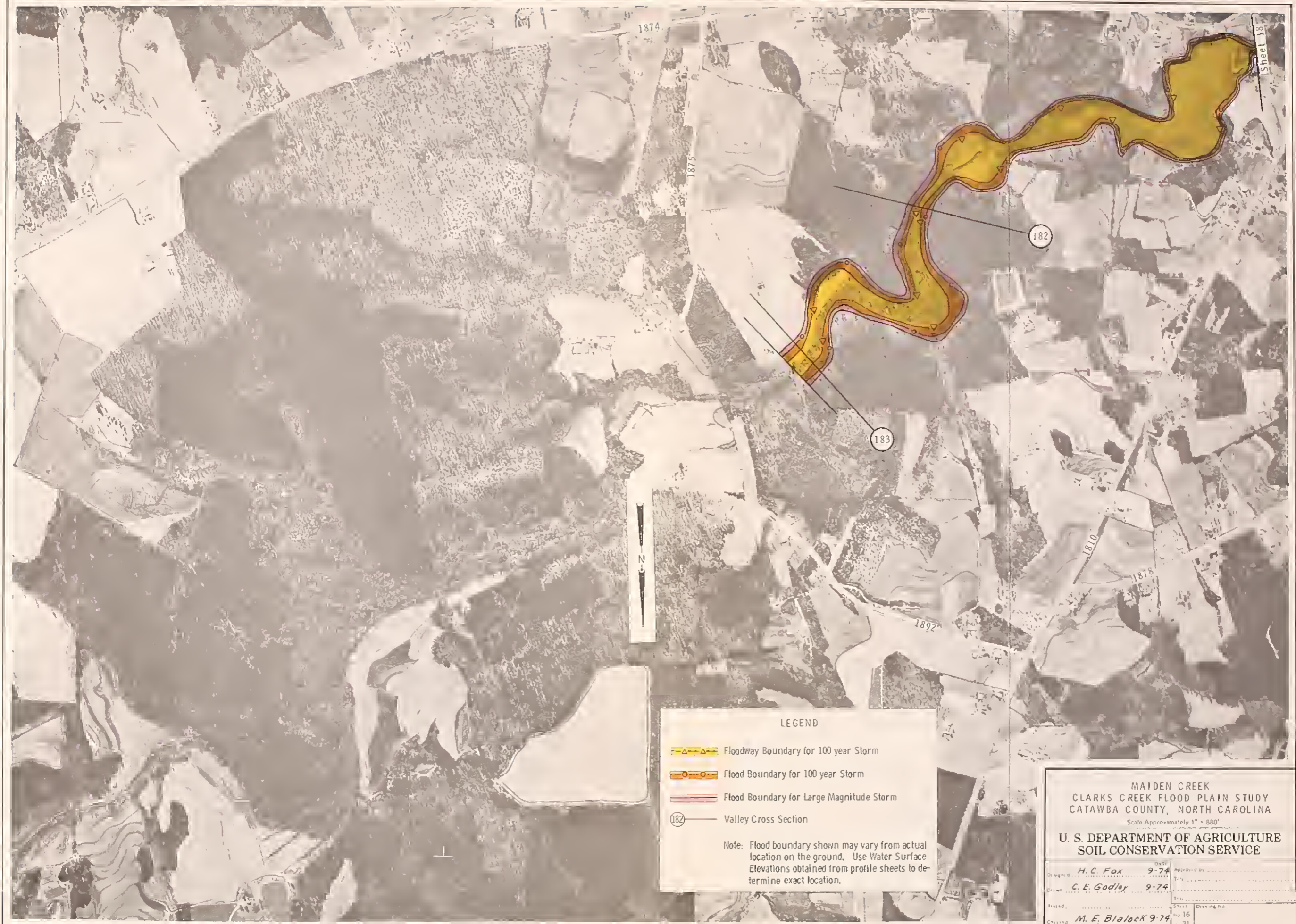
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact locations.

PINCH GUT CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE





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Checked by	M.E. Blalock	Sheet No.	14	of	21







LEGEND

-  Floodway Boundary for 100 year Storm
-  Flood Boundary for 100 year Storm
-  Flood Boundary for Large Magnitude Storm
-  Valley Cross Section

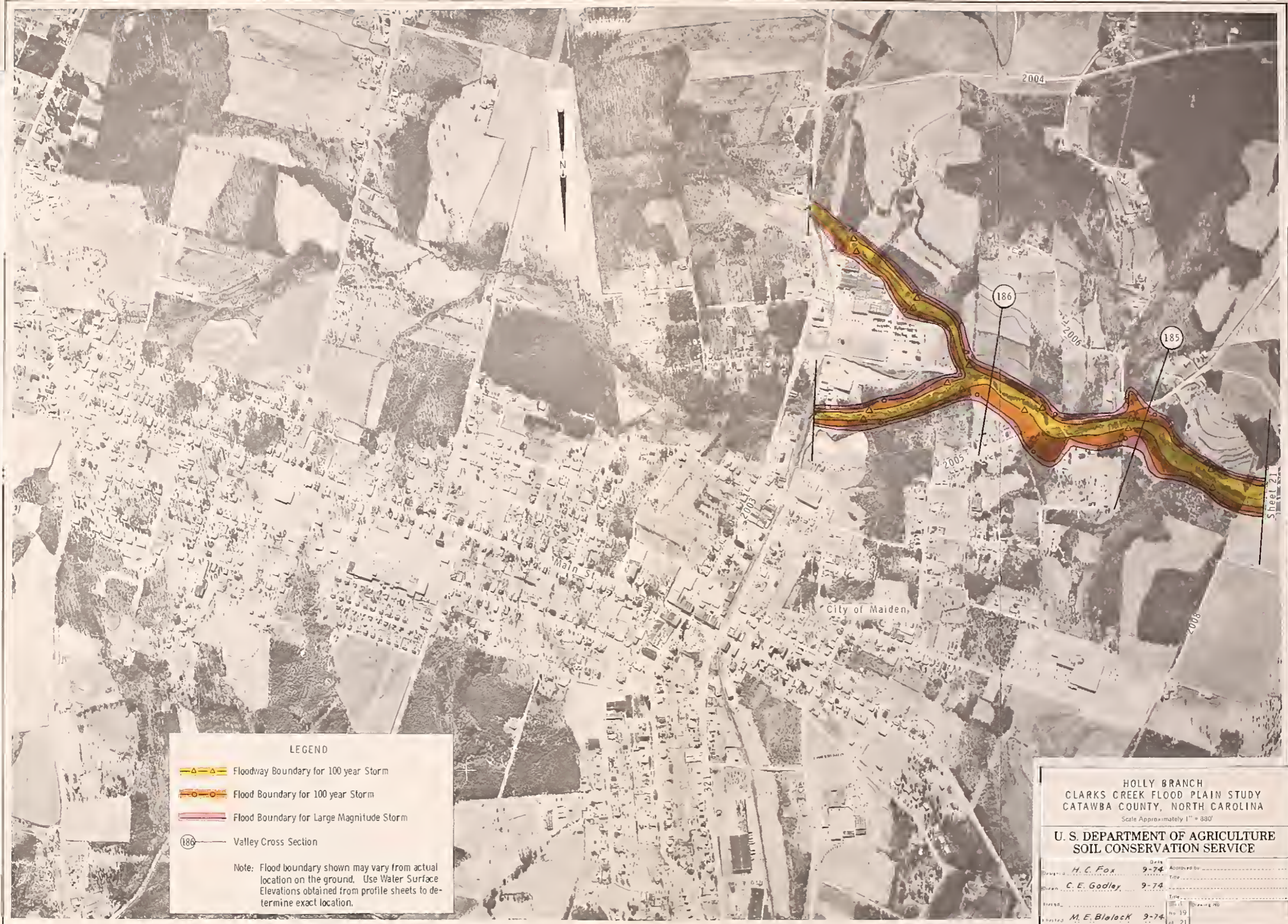
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

ALLEN CREEK
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

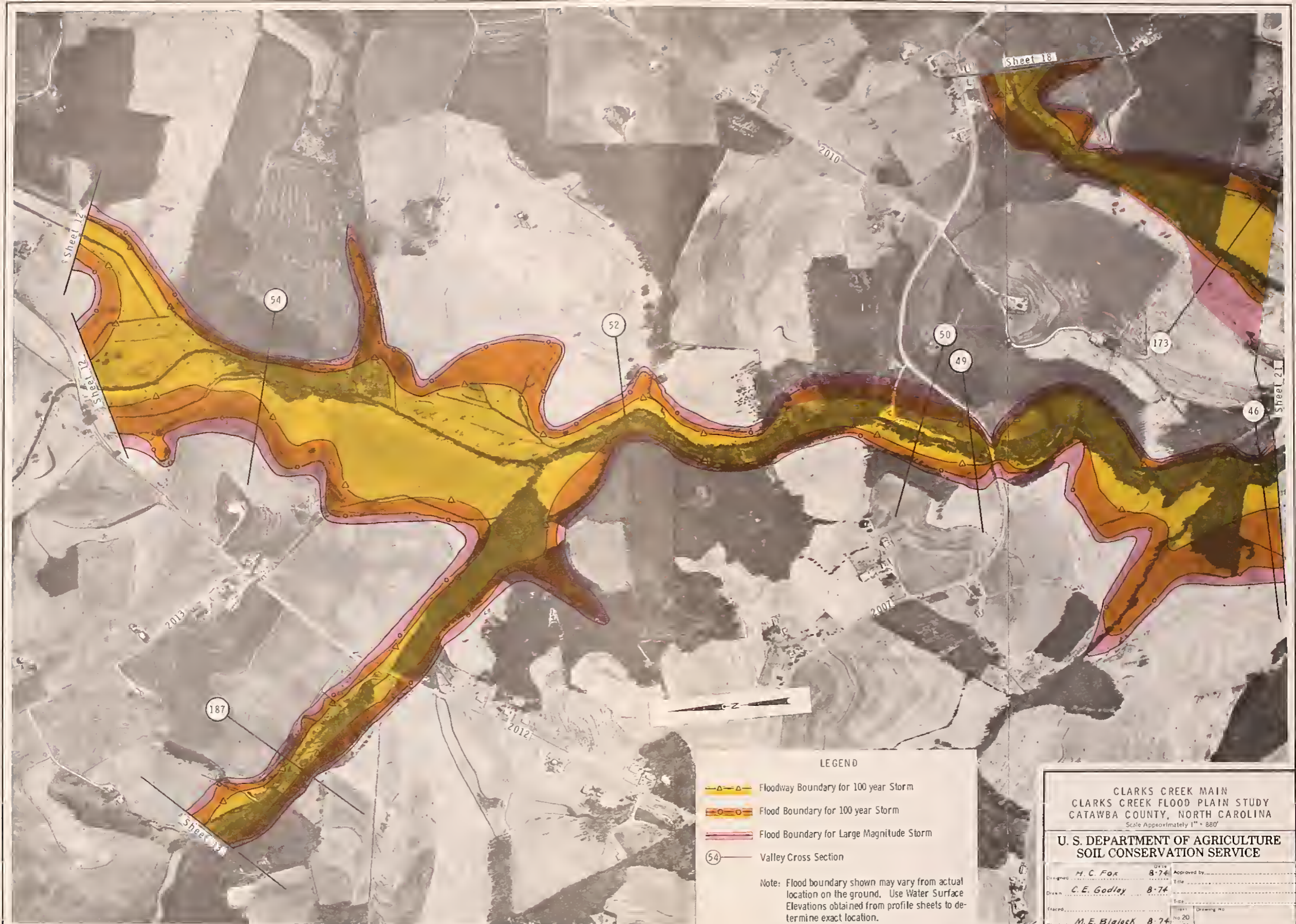
Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

HOLLY BRANCH
CLARKS CREEK FLOOD PLAIN STUDY
CATAWBA COUNTY, NORTH CAROLINA
Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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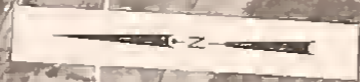
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Lower Limit of Study

Catawba County

Lincoln County

2009



LEGEND

- Floodway Boundary for 100 year Storm
- Flood Boundary for 100 year Storm
- Flood Boundary for Large Magnitude Storm
- Valley Cross Section

Note: Flood boundary shown may vary from actual location on the ground. Use Water Surface Elevations obtained from profile sheets to determine exact location.

CLARKS CREEK MAIN CLARKS CREEK FLOOD PLAIN STUDY CATAWBA COUNTY, NORTH CAROLINA

Scale Approximately 1" = 880'

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

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Drawn by	C. E. Godley	9-74	Title	
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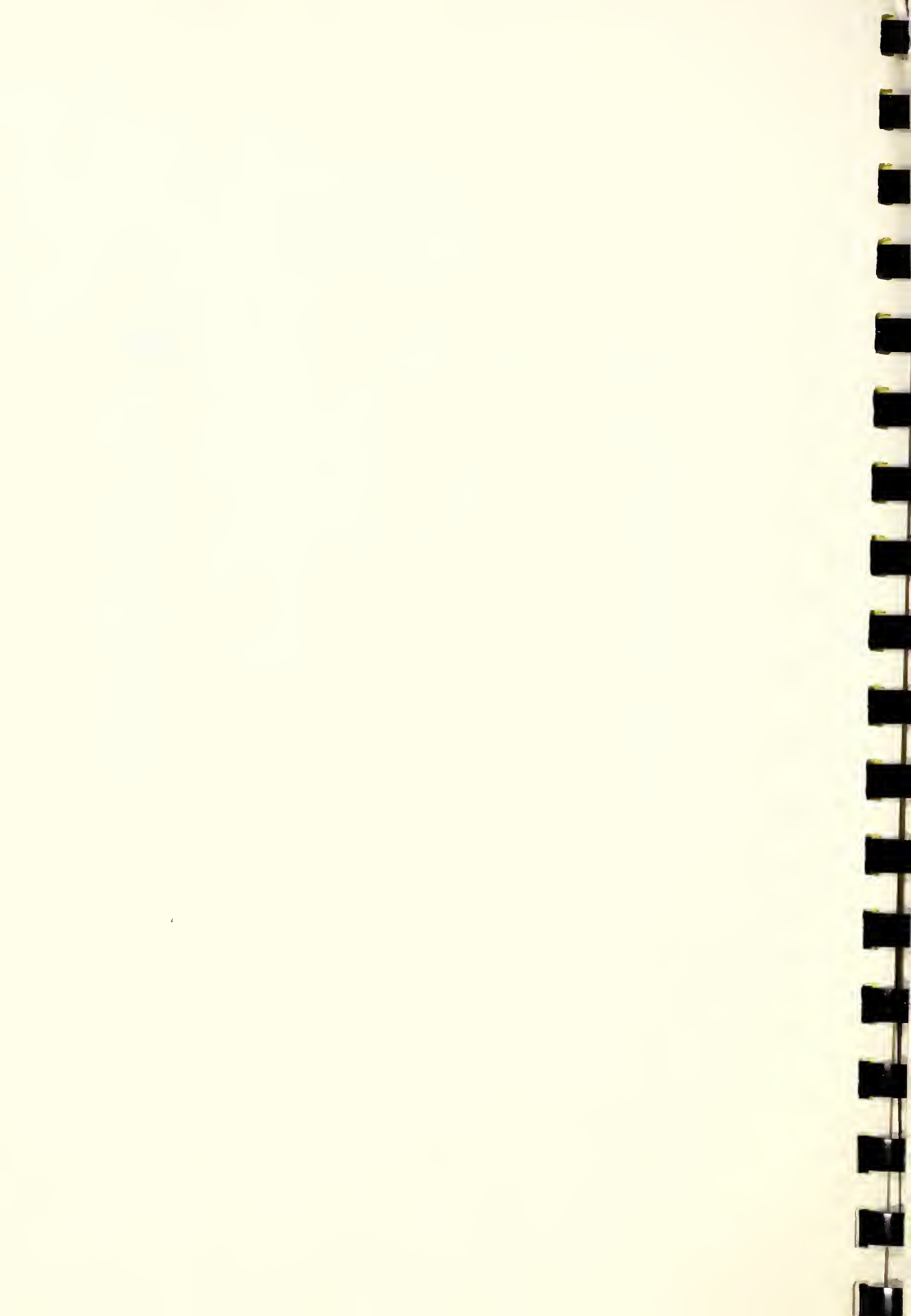
Appendix B

profiles



APPENDIX B
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<u>STREAM</u>	<u>SHEET</u>
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ELEVATIONS - M.S.L.

810

800

790

780

770

Catawba County Line

Limit of Study

810

800

790

780

770

750+00

760+00

770+00

780+00

790+00

800+00

810+00

820+00

830+00

840+00

STATIONS in FEET

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △----- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Clarke Creek Main
HIGH WATER PROFILES
Clarke Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	P. Cohen	Date	3-74	Approved by	
Drawn	P. Vines, Jr.	Date	3-74	Checked	
Traced		Date		Sheet	Drawing No.
Checked	H. Holt	Date	4-74	No. 1	of 28

ELEVATIONS M.S.L.

820

810

800

790

780

820

810

800

790

780

660+00

670+00

680+00

690+00

700+00

710+00

720+00

730+00

740+00

750+00

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

Let Betts Creek

X-54

X-52

X-50

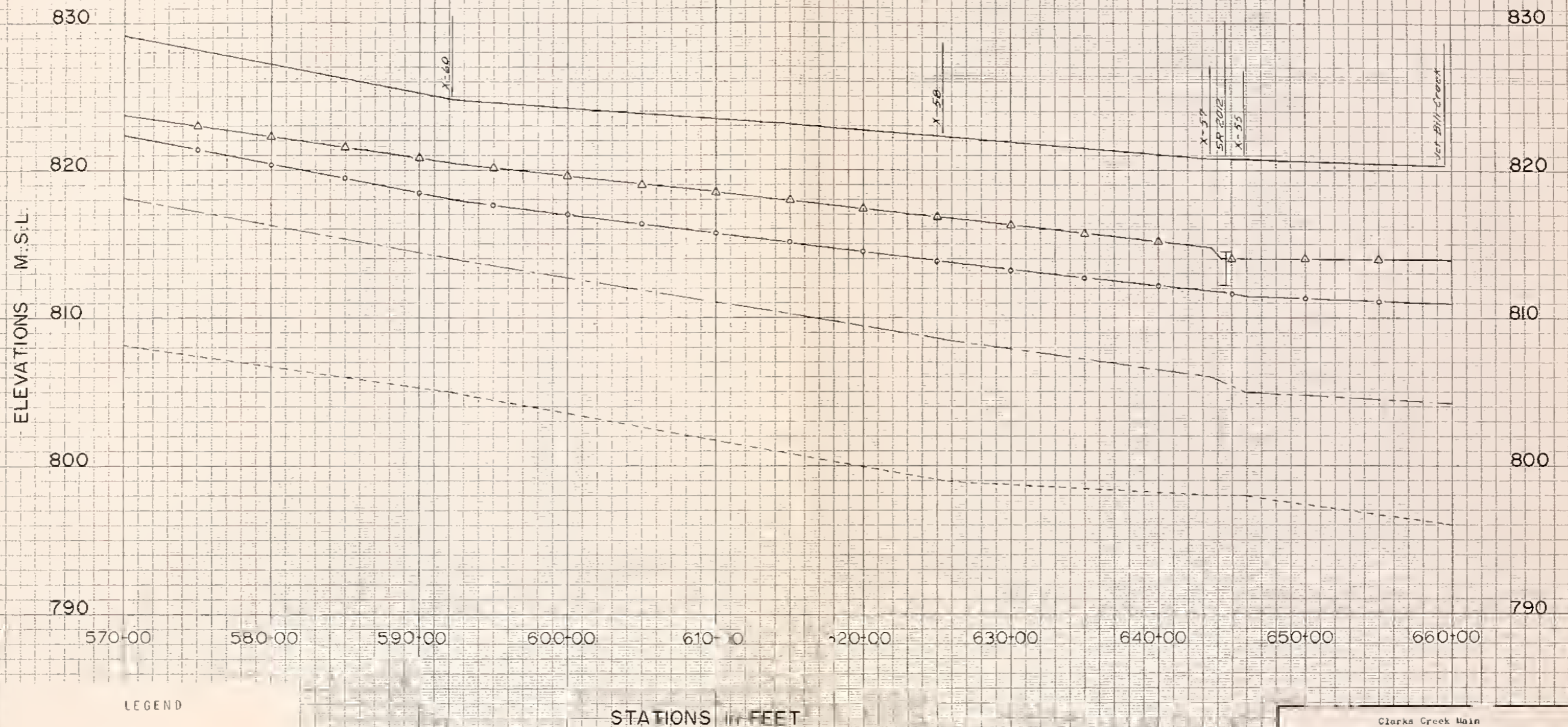
X-49

X-48

X-47

X-46

Clarks Creek Main HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
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- LEGEND
- Bridge Floor
 - Bridge
 - Bottom Girder
 - Stream Bottom
 - Low Bank
 - 100 Year Present Condition
 - △---△ 100 Year Future Condition with Floodway
 - Large Magnitude Flood (14 inches)
 - Valley Cross Section

Clarks Creek Main HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina			
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Traced	H. Holt	Title	
Checked		Sheet	No 3 of 28
		Drawing No	



ELEVATIONS M.S.L.

840

830

820

810

800

840

830

820

810

800

480+00 49+00 500+00 510+00 520+00 530+00 540+00 550+00 560+00 570+00

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATION in FEET

Clarks Creek Main
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
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Traced		Date		Title	
Checked	H. Holt	Date	4-74	Sheet	28
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ELEVATIONS M.S.L.

860

850

840

830

820

860

850

840

830

820

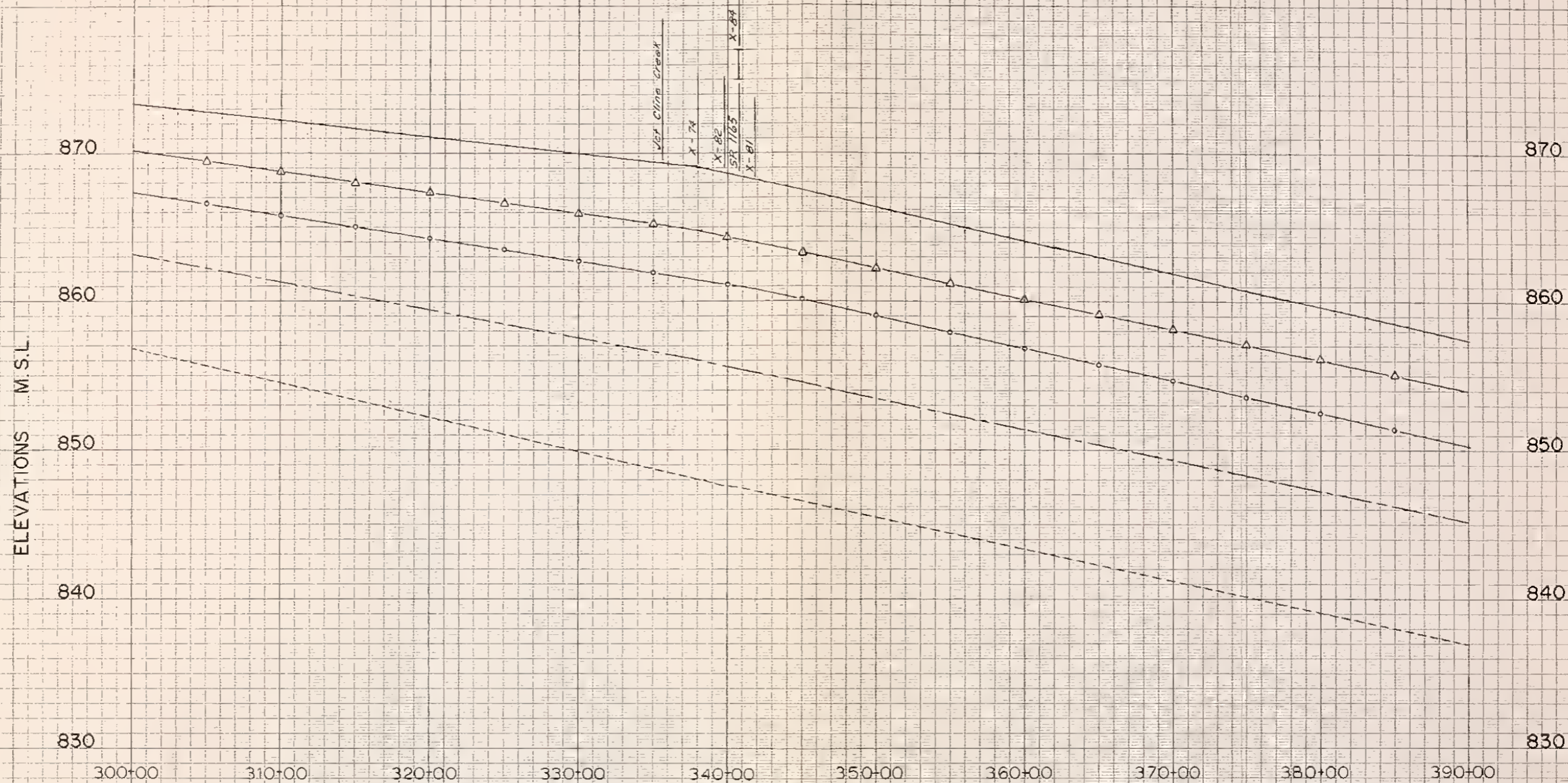
390+00 400+00 410+00 420+00 430+00 440+00 450+00 460+00 470+00 480+00

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

Clarke Creek Main HIGH WATER PROFILES Clarke Creek Flood Plain Study Catawba County, North Carolina			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
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Checked	H. Holt	Date	4-74
		of	28



LEGEND

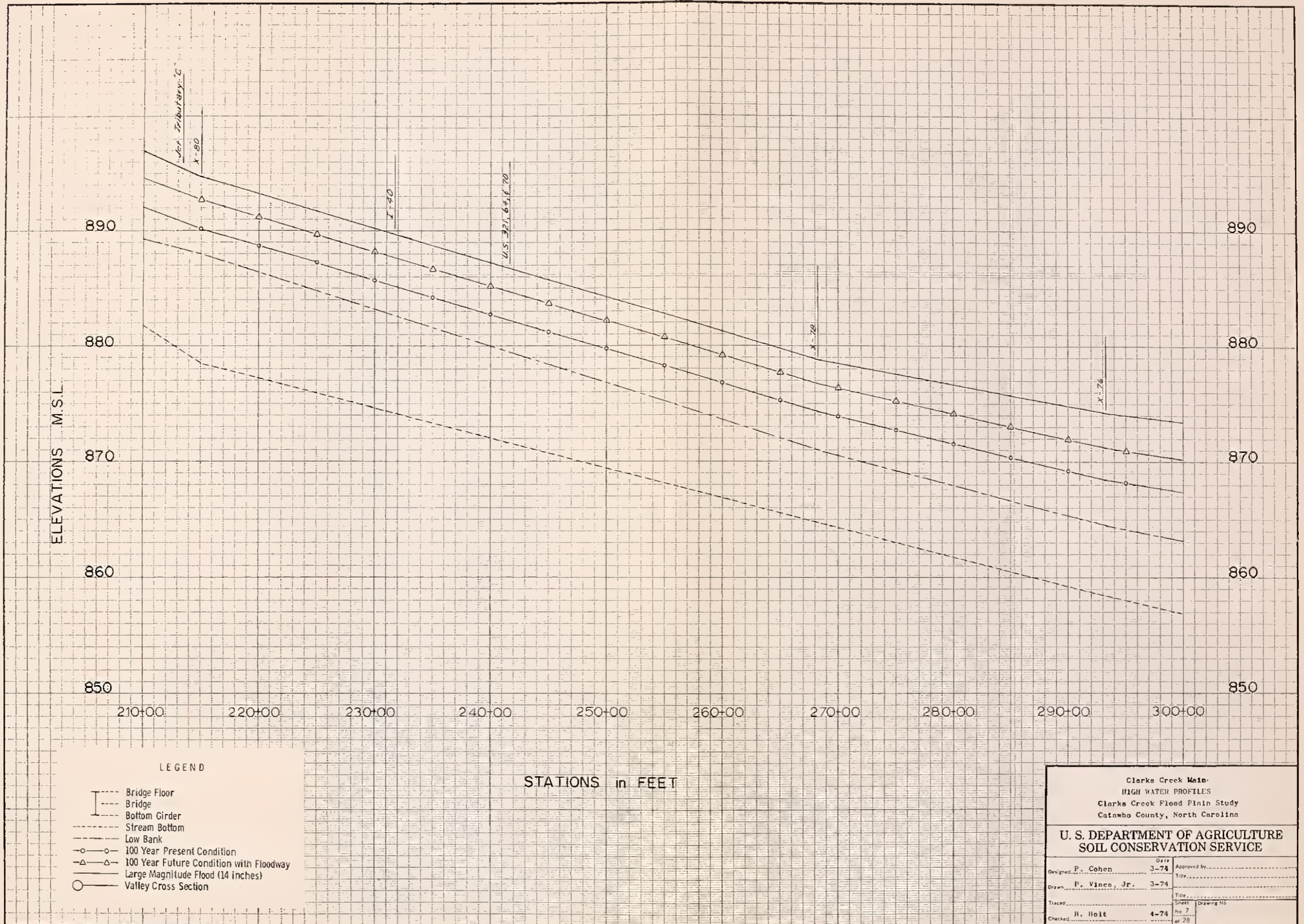
- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

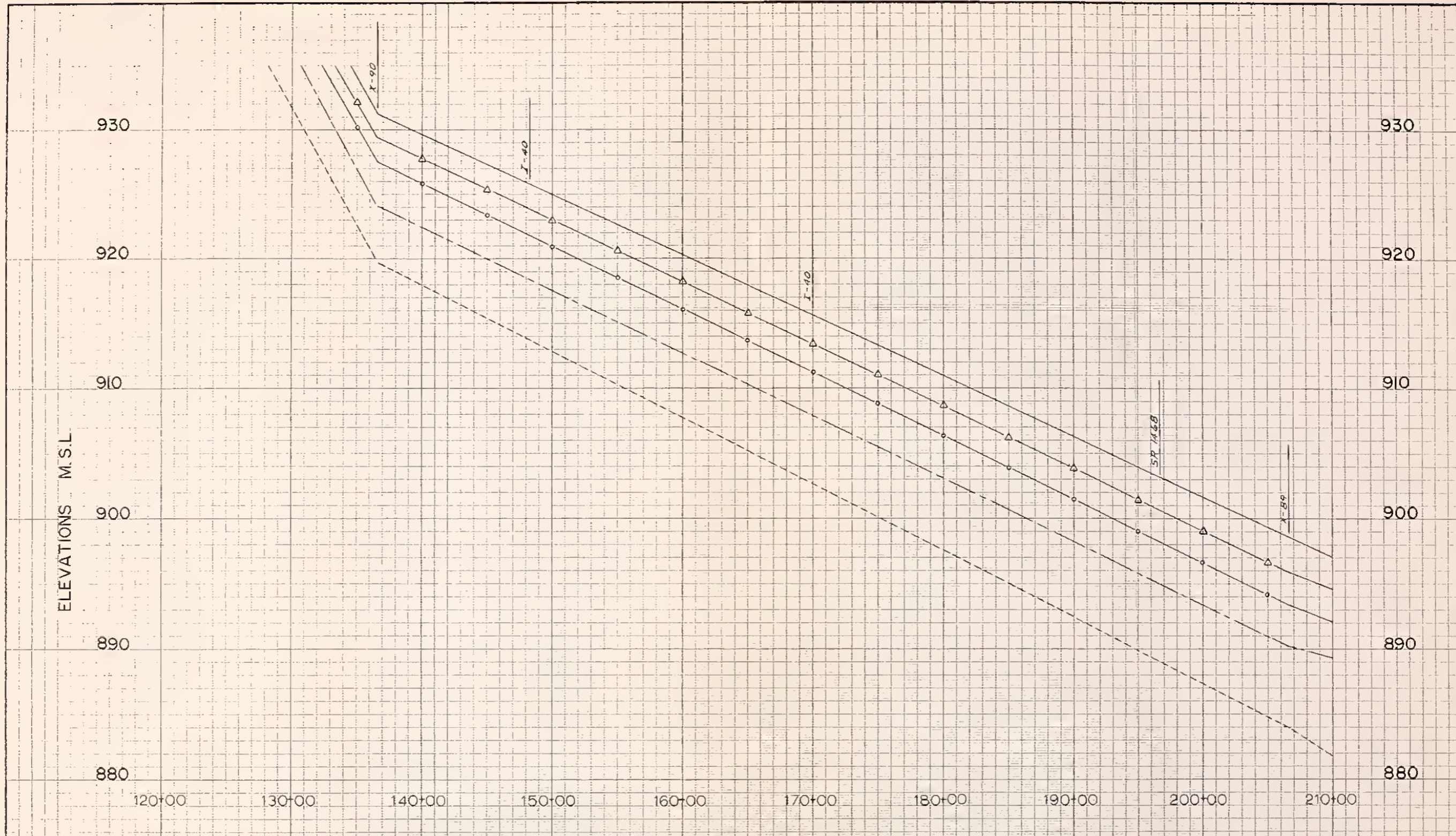
STATIONS in FEET

Clarks Creek Main
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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Traced _____	Sheet _____	Drawing No _____
Checked <u>H. Holt</u>	Date <u>4-74</u>	No. <u>6</u> of <u>28</u>



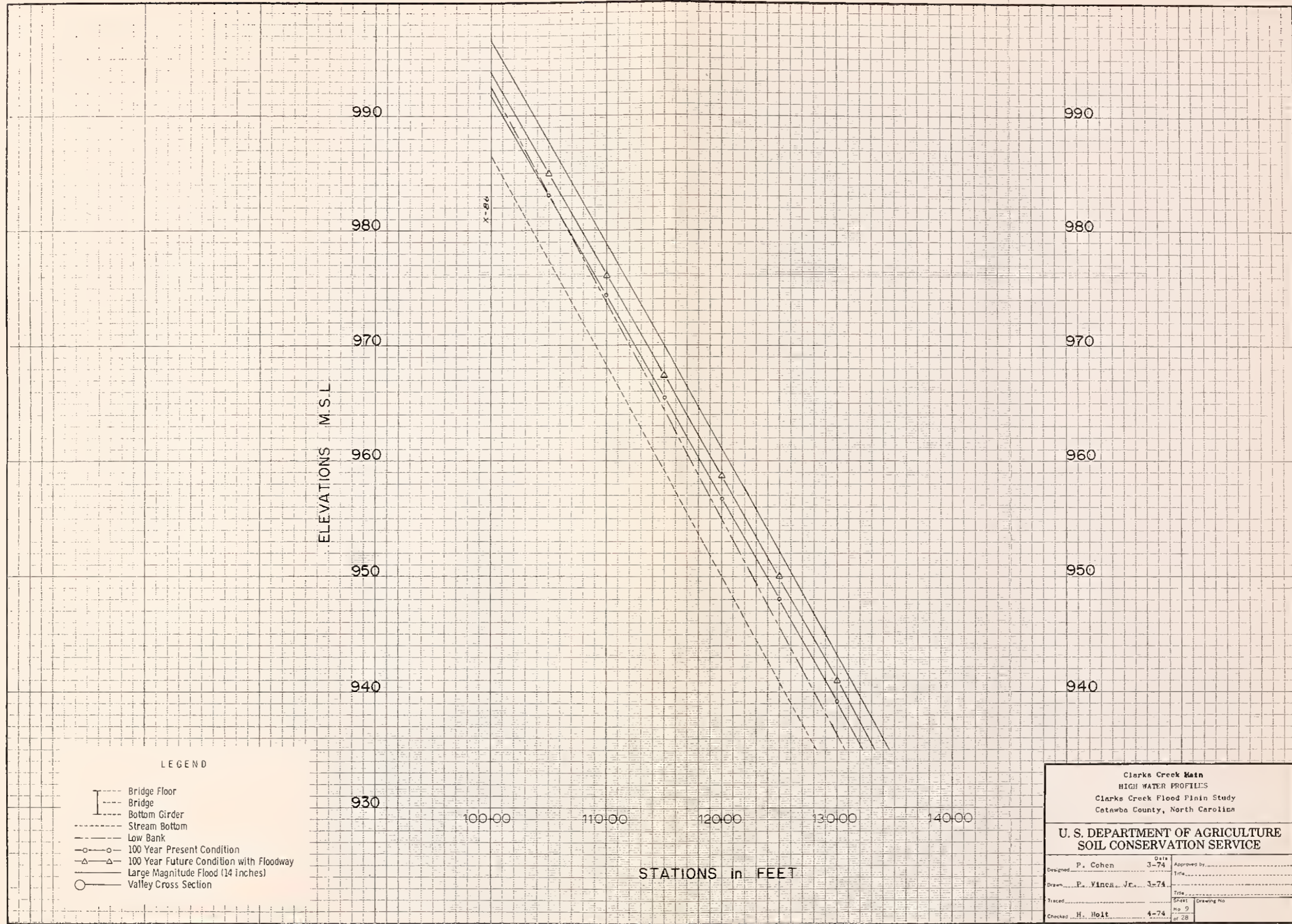


LEGEND

- Bridge Floor
- - - Bridge Bottom Girder
- ... Stream Bottom
- . - Low Bank
- — 100 Year Present Condition
- △ — 100 Year Future Condition with Floodway
- — Large Magnitude Flood (14 inches)
- ◇ — Valley Cross Section

STATIONS in FEET

<p>Clarke Creek Main HIGH WATER PROFILES Clarke Creek Flood Plain Study Catawba County, North Carolina</p>			
<p>U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE</p>			
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		No. 8	
		4-74	
		at 28	



LEGEND

- I Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Clarks Creek Main
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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Drawn	P. Vance, Jr.	Date	3-74	Title	
Traced		Sheet	No. 9	Drawing No.	
Checked	H. Holt	Date	4-74	of 28	










ELEVATIONS M.S.L.

1040
1030
1020
1010
1000
990

50+00 60+00 70+00 80+00 90+00 100+00

STATIONS in FEET

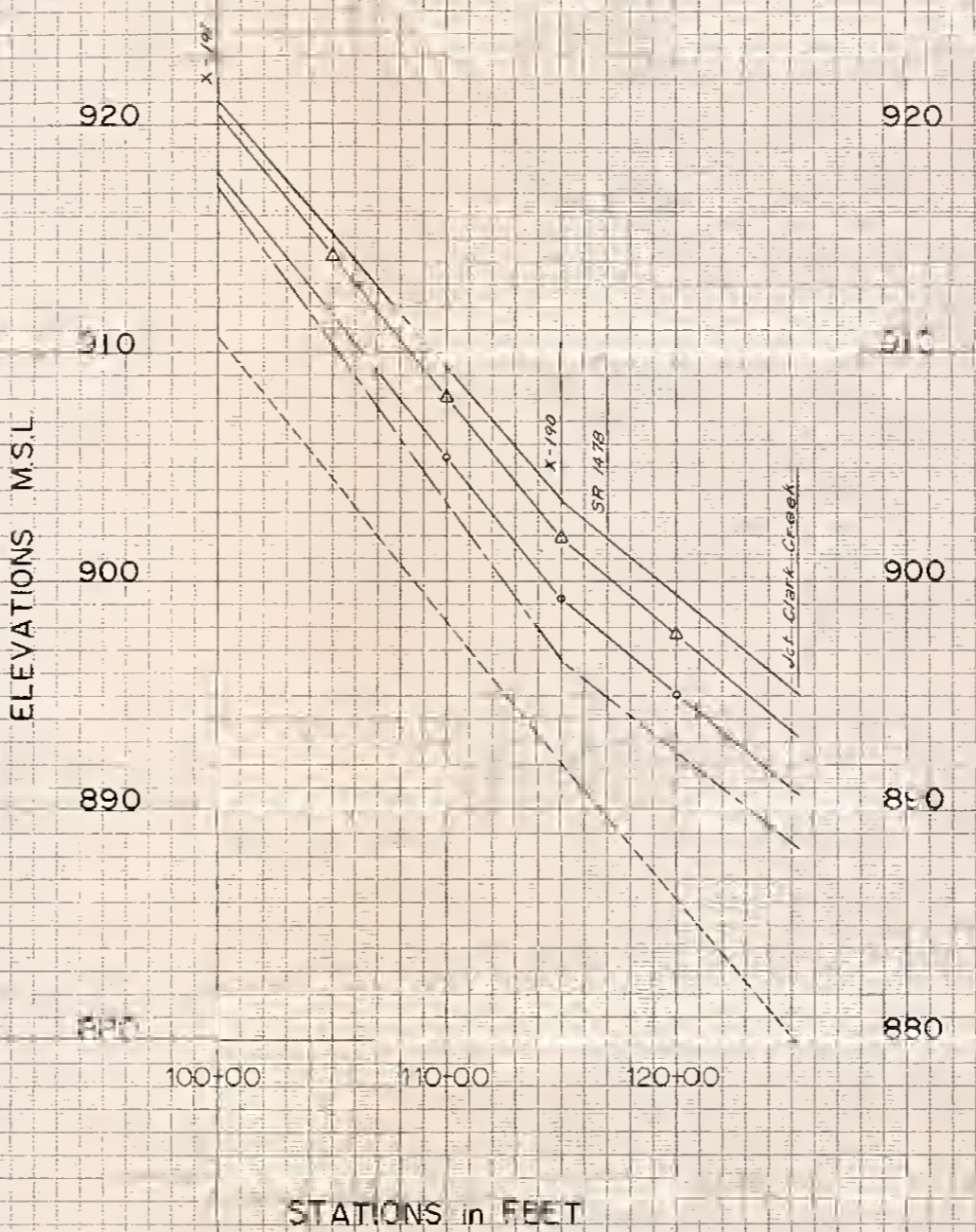
LEGEND

-  Bridge Floor
-  Bridge
-  Bottom Girder
-  Stream Bottom
-  Low Bank
-  100 Year Present Condition
-  100 Year Future Condition with Floodway
-  Large Magnitude Flood (14 inches)
-  Valley Cross Section

Clarks Creek Main
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed <u>P. Cohen</u>	Date <u>3-74</u>	Approved by _____
Drawn <u>P. Vines, Jr.</u>	Date <u>3-74</u>	Title _____
Traced _____	Sheet _____	Drawing No. _____
Checked <u>H. Holt</u>	Date <u>4-74</u>	NS 10 of 25



Tributary "C"
HIGH WATER PROFILES
 Clarks Creek Flood Plain Study
 Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by P. Cohen	Date 3-74	Approved by _____
Drawn by P. Vines, Jr.	Date 3-74	Title _____
Traced by _____	Sheet _____	Drawing No. _____
Checked by H. Holt	Date 4-74	No. 11 of 28

ELEVATIONS M.S.L.

890

880

870

860

850

890

880

870

860

850

100+00 110+00 120+00 130+00 140+00 150+00 160+00 170+00

STATIONS in FEET

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

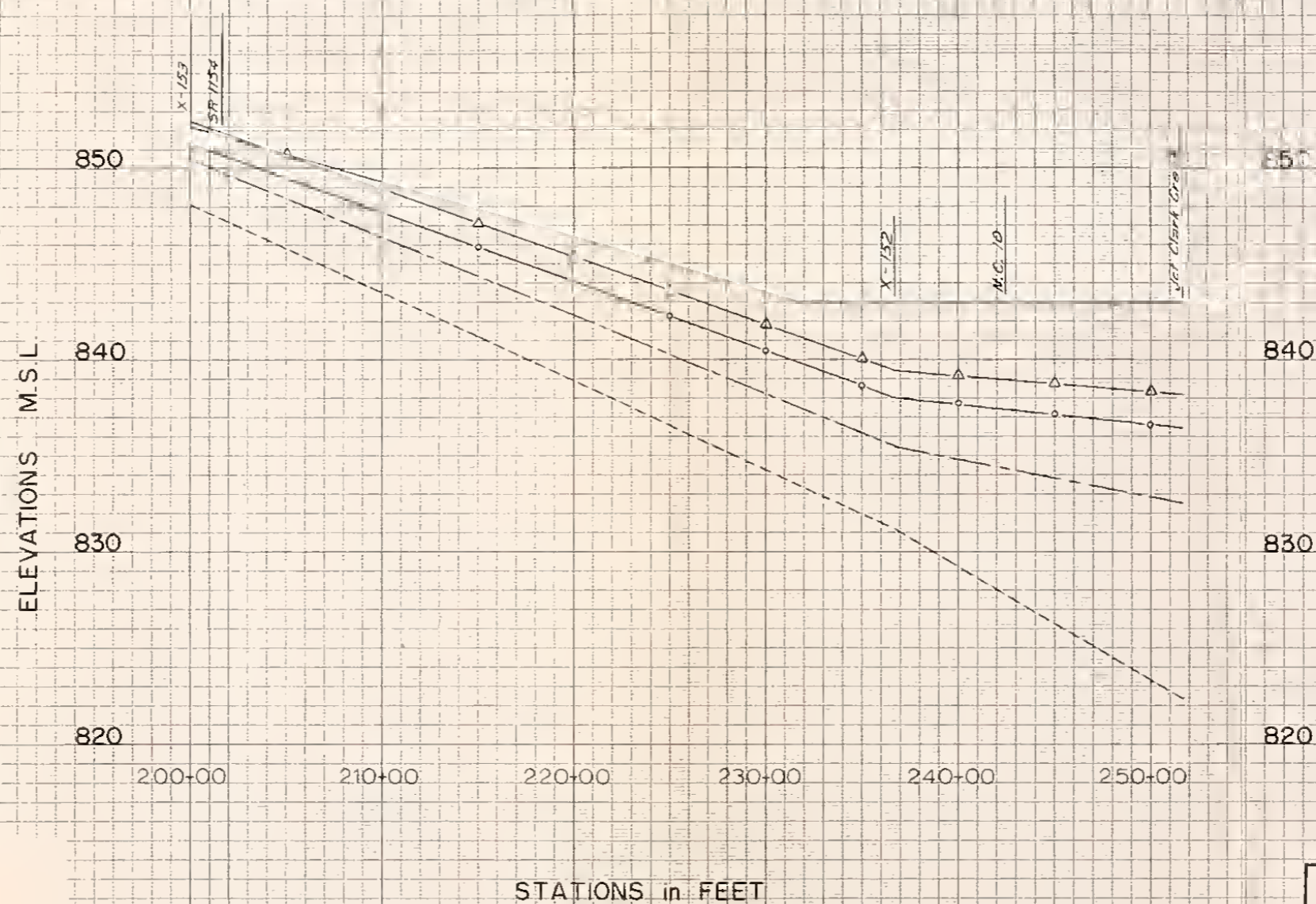
SR 1164
X-165

X-164
Let Clark Creek

Cline Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
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				or	28



ELEVATIONS M.S.L.

LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

850

840

830

820

810

150+00

160+00

170+00

180+00

190+00

200+00

210+00

850

840

830

820

810

X-135

Northwestern RR

X-134

Valley Cross Section X-132

122.5 ft

Valley Cross Section

Smyre Creek
HIGH WATER PROFILES
Clark's Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
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Traced		Sheet	No 14	Drawing No	
Checked	H. Holt	4-74	of 28		

ELEVATIONS M.S.L.

860

850

840

830

820

860

850

840

830

820

150+00

160+00

170+00

180+00

190+00

200+00

210+00

STATIONS in FEET

LEGEND

- Bridge Floor
- Bridge
- Bottom Gilder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Town Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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Drawn	P. Vines, Jr.	Date	3-74	Title	
Traced		Date		Sheet	
Checked	H. Holt	Date	4-74	No. 16	
				of 28	

ELEVATIONS M.S.L.

STATIONS in FEET

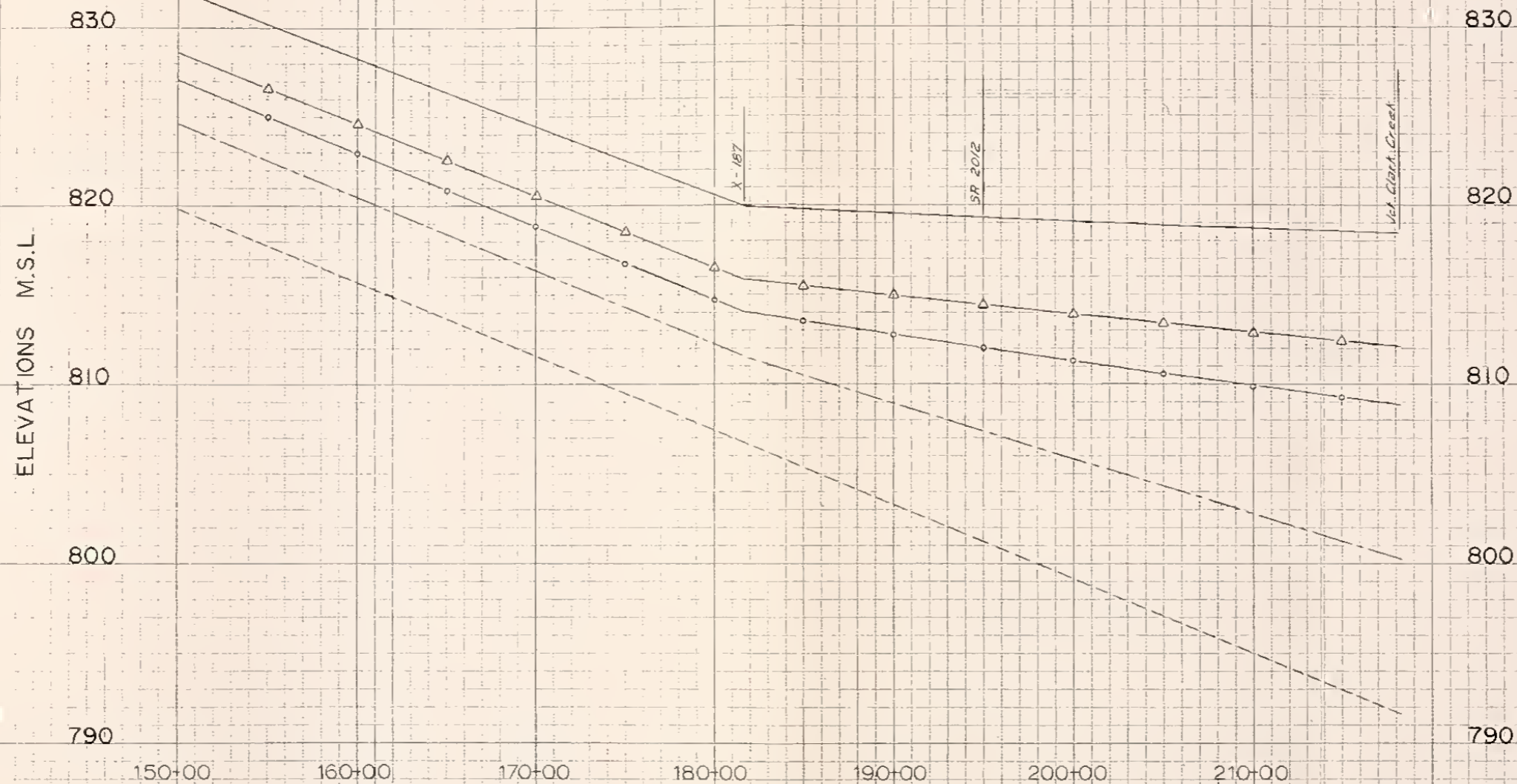
LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Bill Creek
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
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			Page 28	



LEGEND

STATIONS in FEET

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Betts Creek HIGH WATER PROFILES Clarke Creek Flood Plain Study Catawba County, North Carolina			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed	P. Cohen	Date	3-74
Drawn	P. Vines, Jr.	Date	3-74
Traced		Date	
Checked	H. H. Hitt	Date	4-74
		Sheet	no 18
		Drawing No	

ELEVATIONS M.S.L.

850

840

830

820

850

840

830

820

100+00

110+00

120+00








130+00

140+00

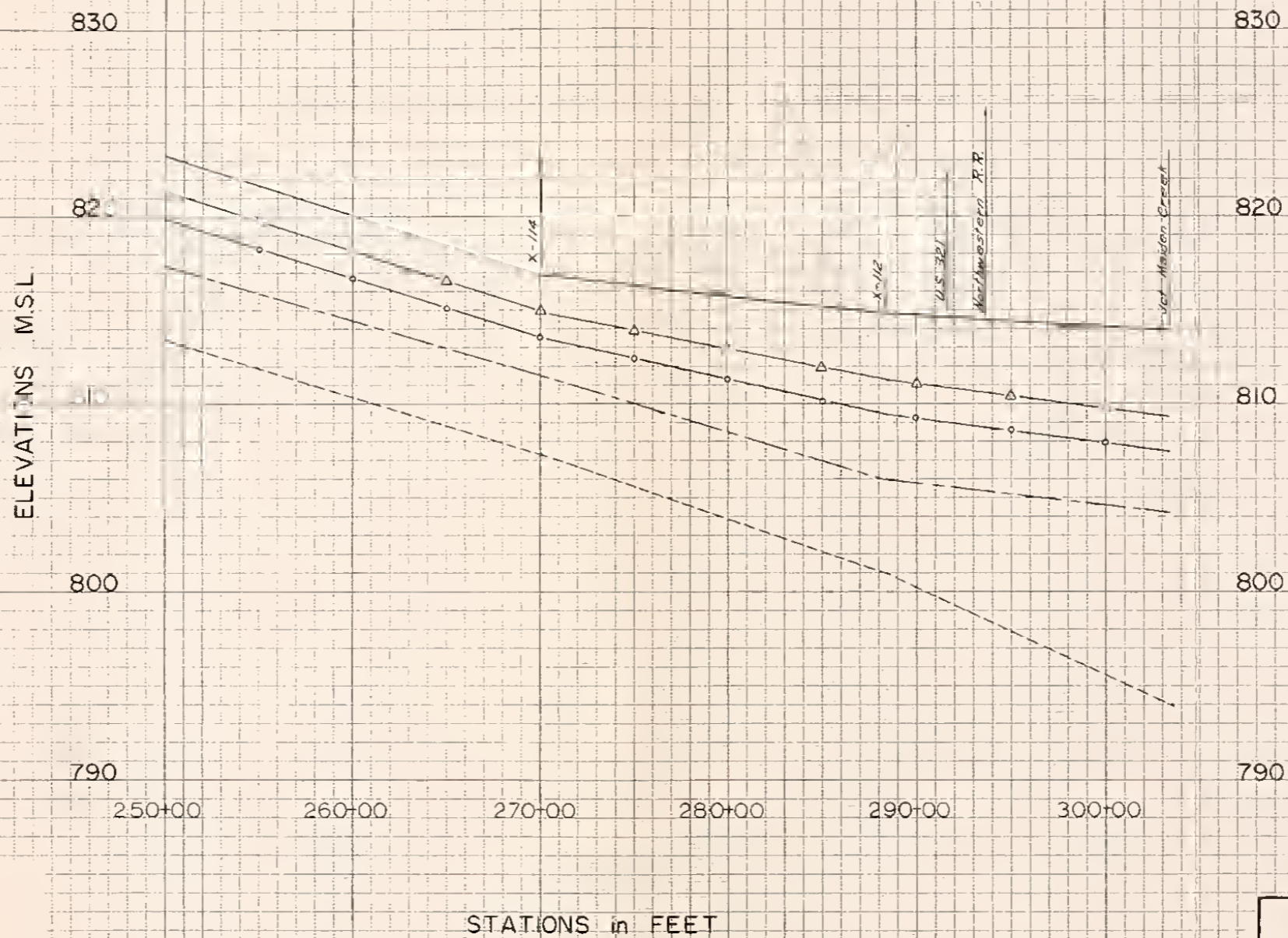
150+00

STATIONS in FEET

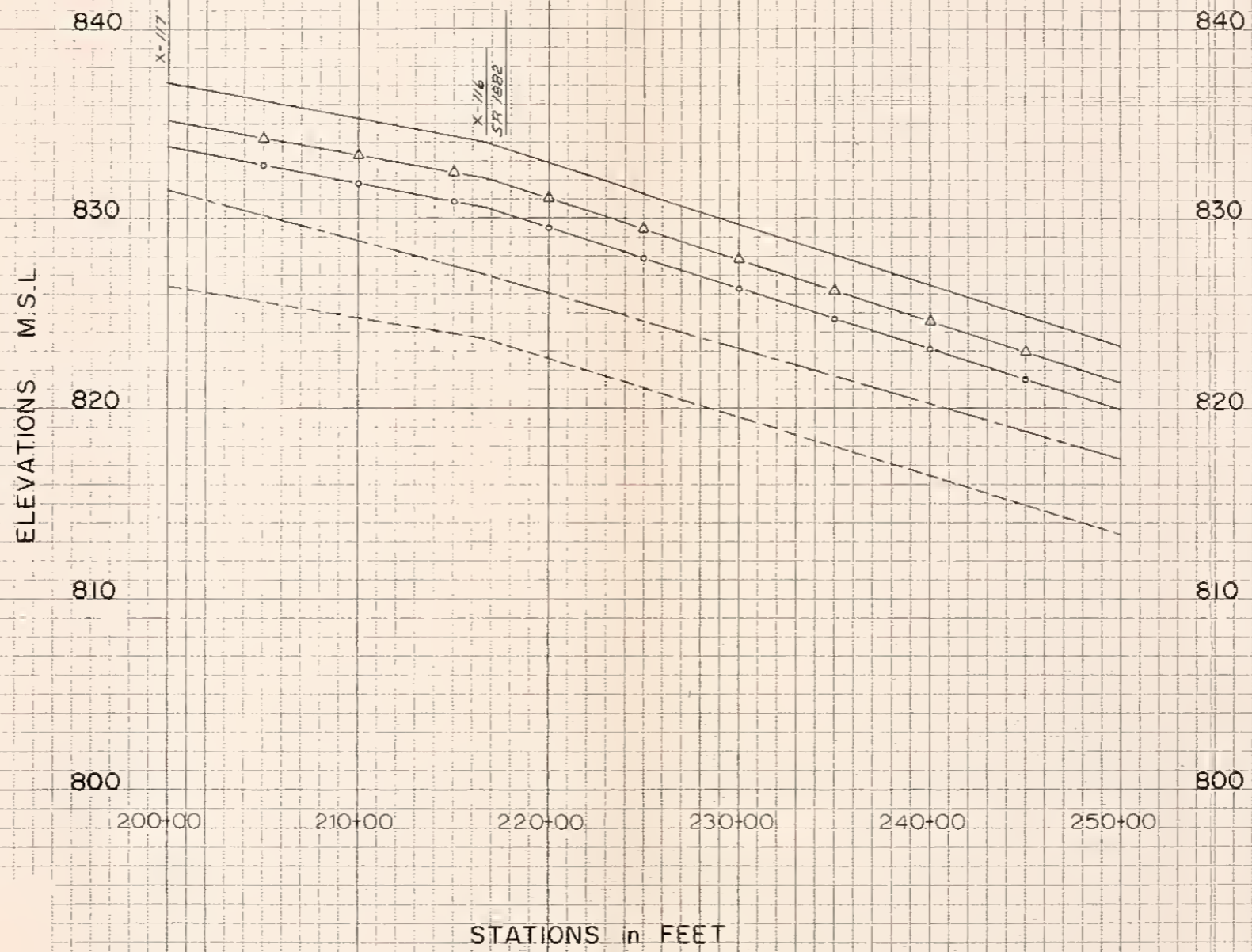
LEGEND

-  Bridge Floor
-  Bridge Bottom Girder
-  Stream Bottom
-  Low Bank
-  100 Year Present Condition
-  100 Year Future Condition with Floodway
-  Large Magnitude Flood (14 inches)
-  Valley Cross Section

Betts Creek HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina			
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Traced		Title	
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		Drawing No	



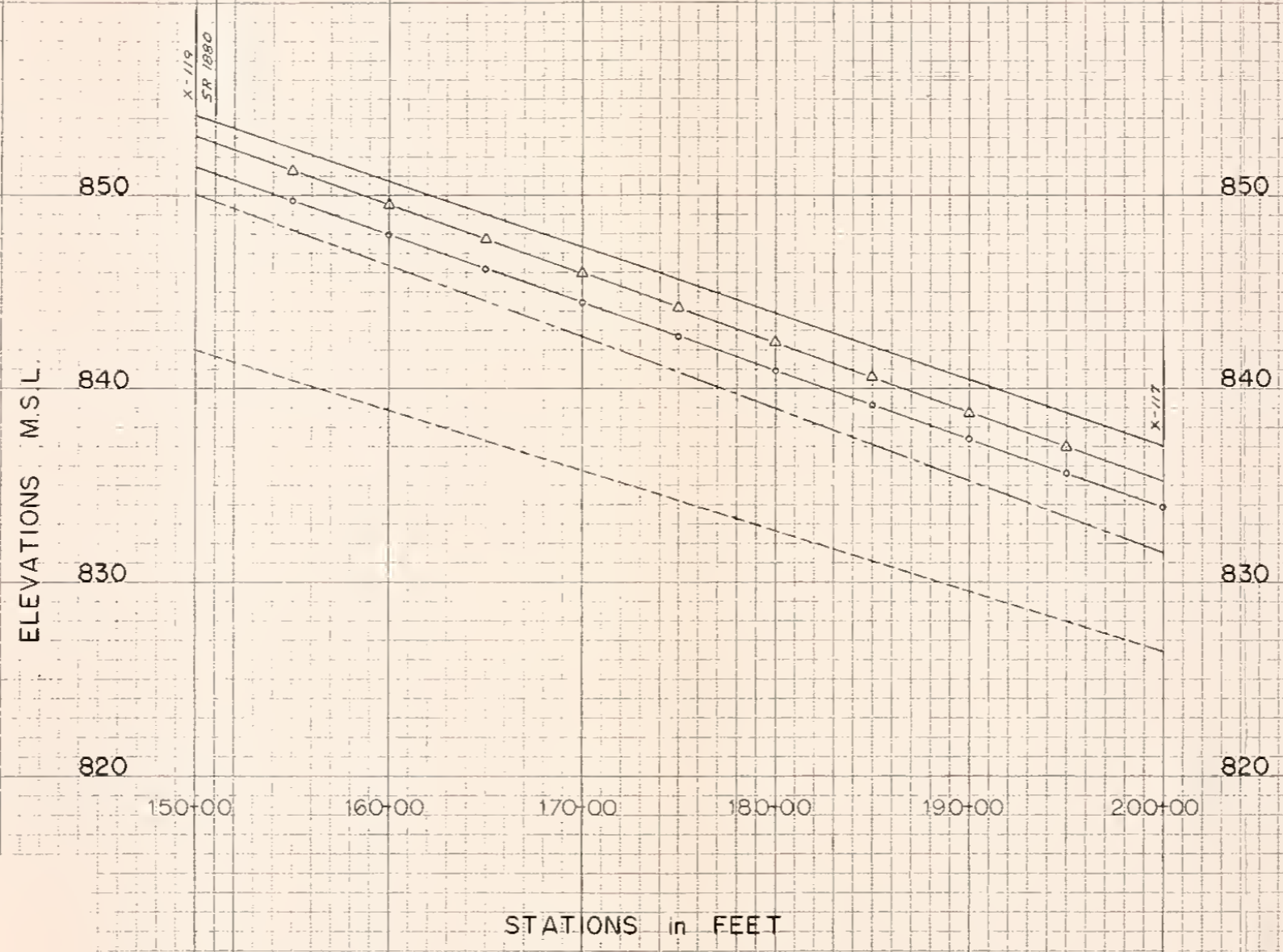
<p align="center">Pinch Gut HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina</p>			
<p align="center">U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE</p>			
Designed by	P. Cohen	Date	3-74
Drawn by	P. Vinca, Jr.	Date	3-74
Traced by	H. Holt	Date	4-74
Checked by		Date	
<p>Approved by _____</p>		<p>Special Agent in Charge</p>	
<p>Sheet No. 20 of 28</p>		<p>Drawing No.</p>	



LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

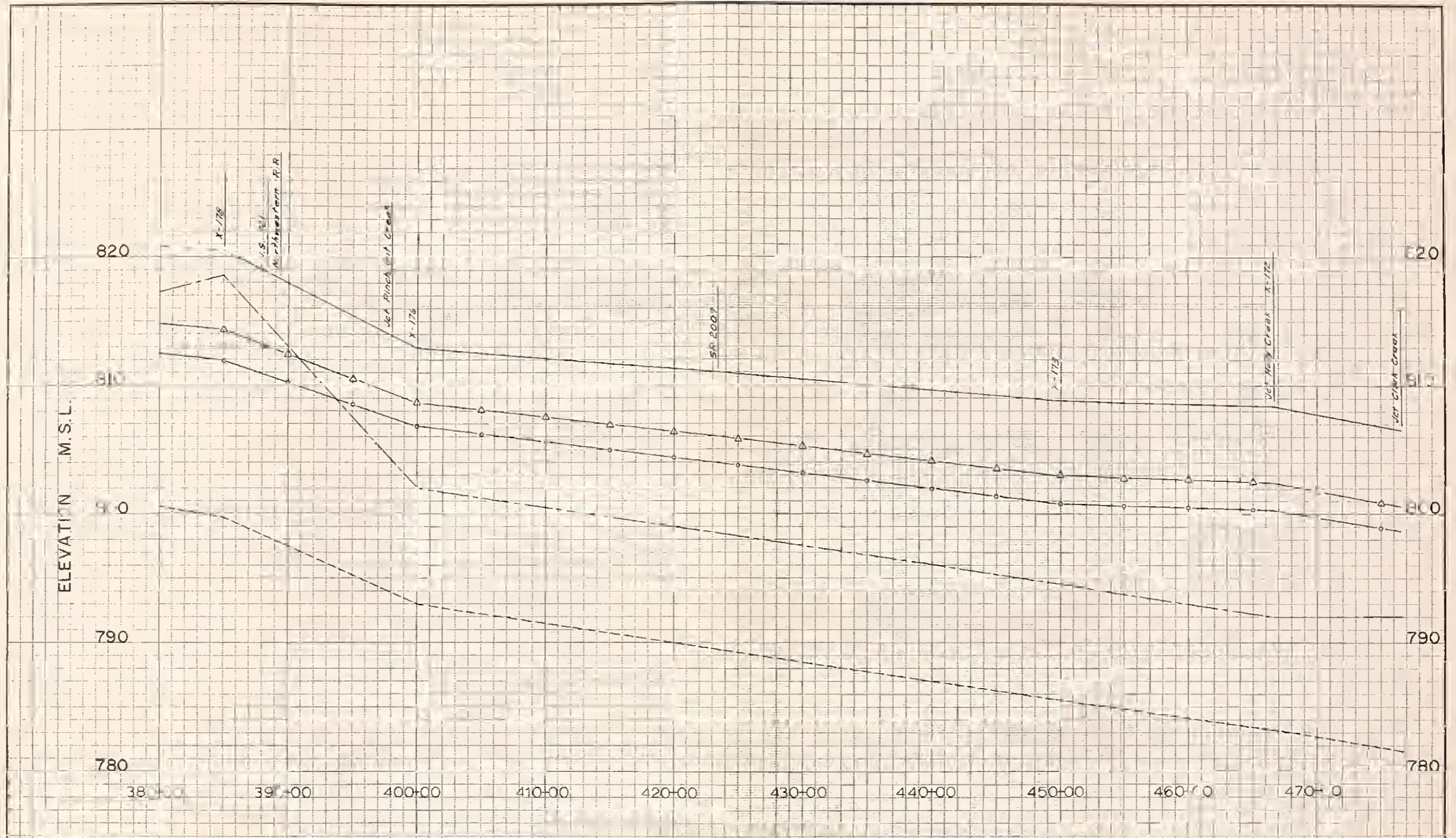
Pinch Cut HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
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Traced _____	Sheet <u>No 21</u>	Drawing No. _____	
Checked <u>H. Holt</u>	Date <u>4-74</u>	of 28	



LEGEND

- Bridge Floor
- - - Bridge
- ... Bottom Girder
- . - . Stream Bottom
- - - Low Bank
- — 100 Year Present Condition
- △ — 100 Year Future Condition with Floodway
- — Large Magnitude Flood (14 inches)
- ◇ — Valley Cross Section

Pinch Gut HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed	P. Cohen	Date	3-74
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Checked	H. Holt	Date	4-74
		Sheet	No 22 of 28
		Drawing No	

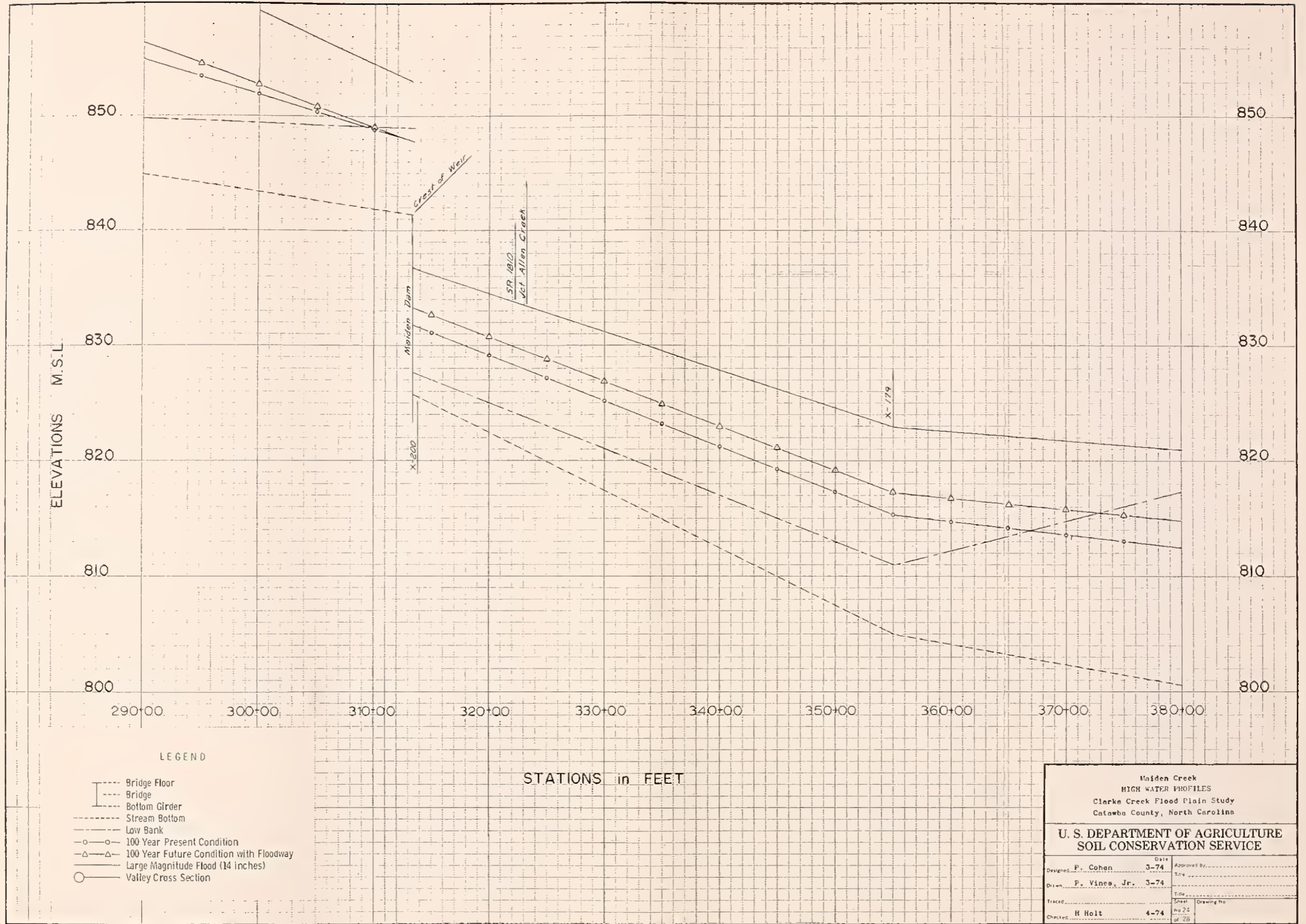


LEGEND

- Bridge Floor
- Bridge
- Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

STATIONS in FEET

<p>Maiden Creek HIGH WATER PROFILES Clarks Creek Flood Plain Study Catawba County, North Carolina</p>			
<p>U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE</p>			
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Traced		Date	
Checked	H. Holt	Date	4-74
		Sheet	23 of 28
		Drawing No.	



ELEVATIONS M.S.L.

860

850

840

830

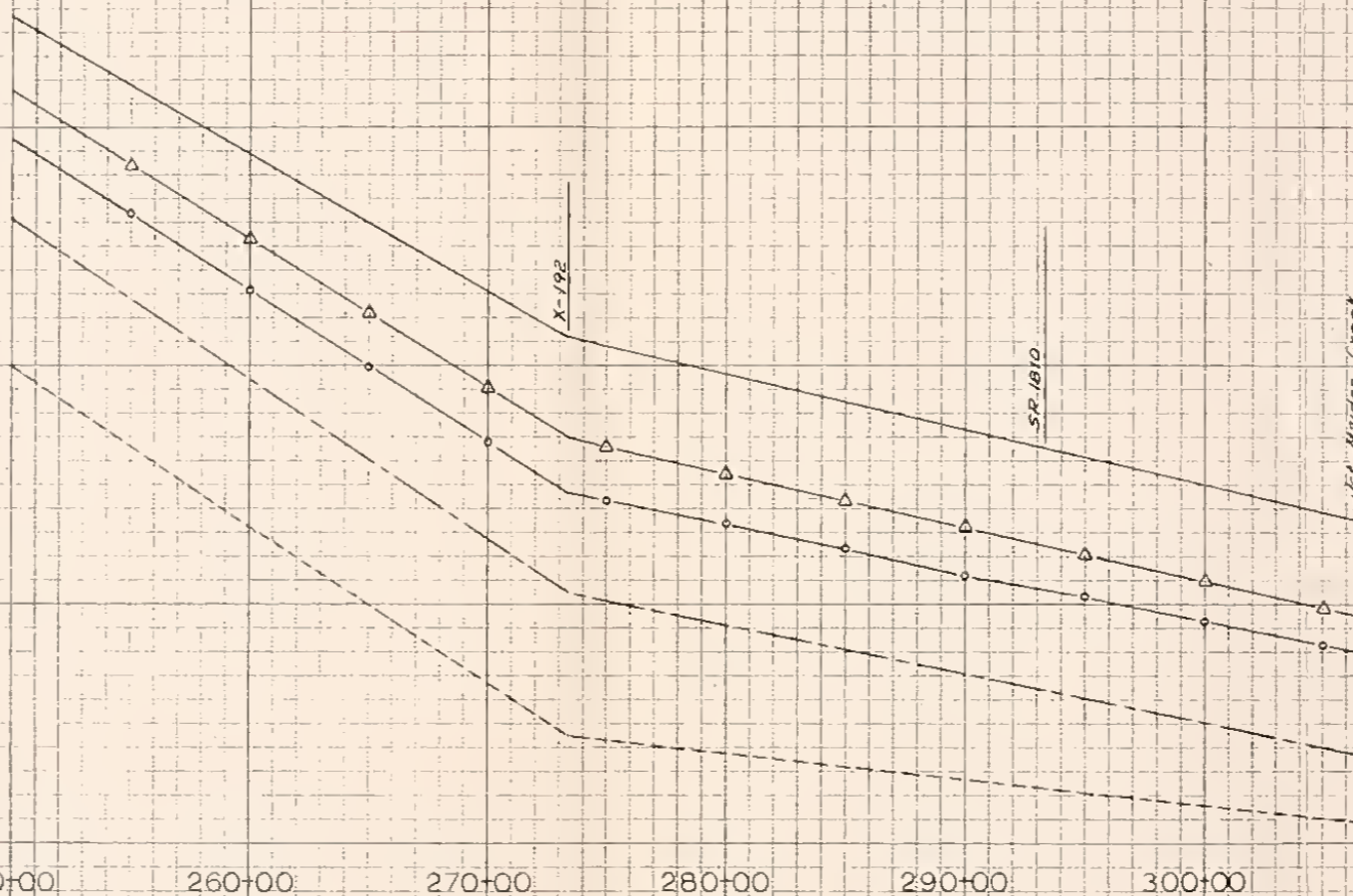
820

250+00 260+00 270+00 280+00 290+00 300+00

STATIONS in FEET

LEGEND

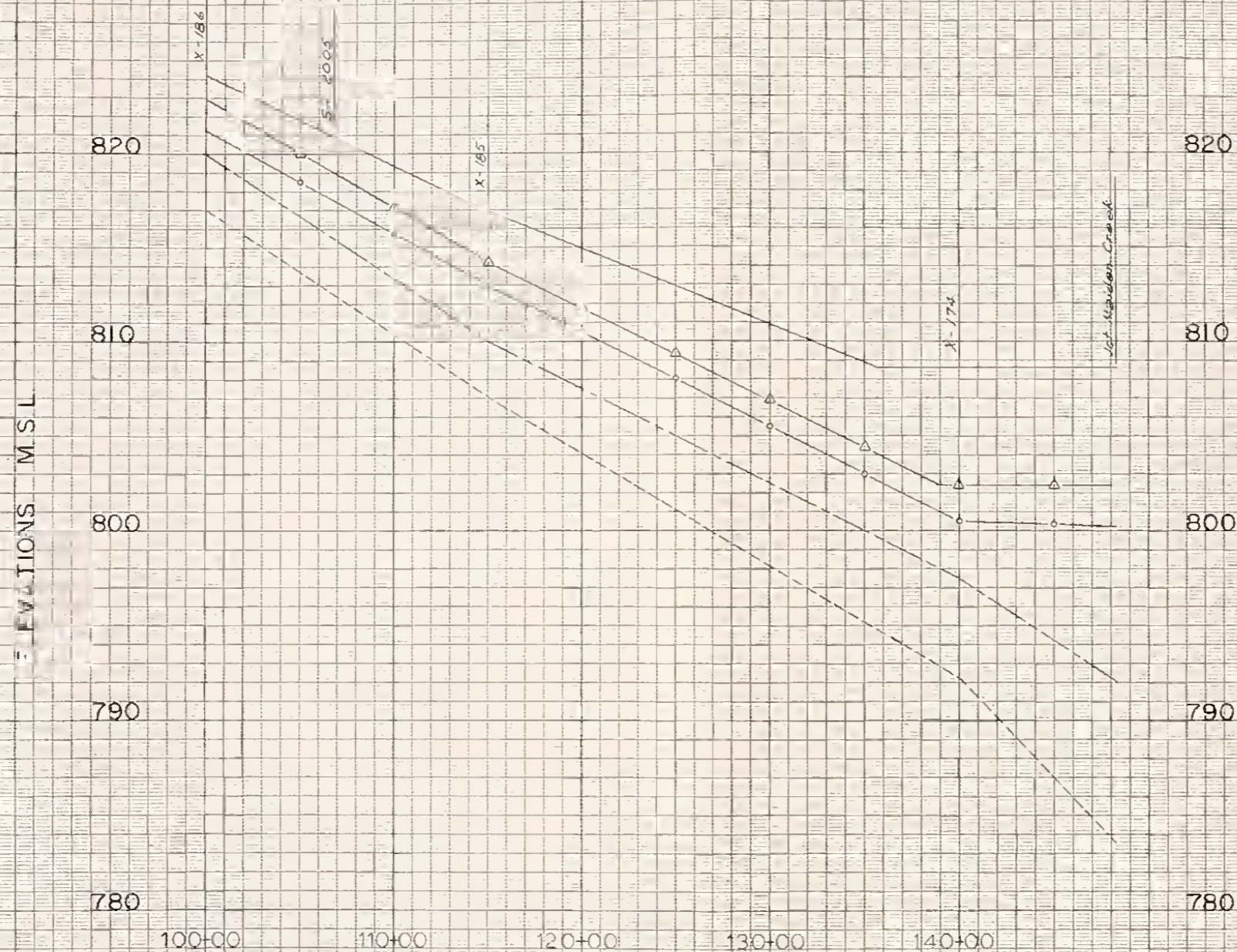
- Bridge Floor
- Bridge Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- △—△ 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section



Allen Creek
HIGH WATER PROFILES
Clarke Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

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Drawn by	P. Vines, Jr.	Date	3-74	Checked by	
Traced by		Sheet	No. 26	Drawing No.	
Checked by	H. Holt	Date	4-74	of 28	



LEGEND

- Bridge Floor
- Bridge Bottom Girder
- Stream Bottom
- Low Bank
- 100 Year Present Condition
- 100 Year Future Condition with Floodway
- Large Magnitude Flood (14 inches)
- Valley Cross Section

Holly Branch
HIGH WATER PROFILES
Clarks Creek Flood Plain Study
Catawba County, North Carolina

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Designed by P. Cohen Date 3-74
Drawn by P. Vines, Jr. 3-74
Traced by H. Holt 4-74
Checked by H. Holt 4-74

No. 28
of 28

